Memo from the Editor

We had the privilege of visiting a number of superb milk processing and dairy products manufacturing plants last month. They were located in New York State in some truly beautiful dairy country. It was early in June and the "flush" season was at its peak. What impressed us more than anything else was the tremendous increase in volume that these plants were forced to meet. No better demonstration of the need for a concerted, intelligent attack on the violent production fluctuations could be found. There are ways of reducing this difficult problem. They should be undertaken.

N.M.

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Bulk Handling of Milk — New Jersey —

By A. C. WOODRUFF
Mojonnier Bros. Co.

JOSEPH HAIK, Jr.

For a number of years milk handlers in California have been sending tank trucks direct to the farm to pick up milk. Because of the large size of California dairy herds the practice was a logical one. Within recent years the system of picking up milk at the farm by a tank truck has been adapted to smaller herds in other parts of the country. We have gathered together the stories of three different bulk handling operations. Two of the operations are in the east, one is in the far west. We think that you will find these articles a source of sound information on this intriguing development.

ON APRIL 1, Green Valley Farms, Haddonfield, N. J. placed in operation a bulk system for collecting milk on the farms.

Sixteen farms are equipped with Producers Cold Wall Tanks, Three additional farms are being converted to bulk tanks at which time there will be nineteen farms on the route representing the entire milk supply of Green Valley Farms. The milk is picked up daily with a two-compartment trailer tank, each compartment having a capacity of 1500 gallons. Guernsey milk goes in one compartment, mixed herd milk in the other.

Some people have said that the bulk system is good only for big farms. There has been a lot of doubt as to the practicability of bulk equipment for the medium sized dairy farms of which there are tens of thousands throughout the country.

If any skepticism on these points has existed in the past, a study of the Green Valley Farms operation forcefully demonstrates that bulk handling is a practical method for the average dairy farm. For example, the average producer on the route operates a 152 acre farm, and milks 28 cows. Four producers milk 15 cows or less.

To get the overall picture, it is necessary to start with Mr. J. Haik, Jr., President of the Green Valley Farms Dairy of Haddonfield, New Jersey. Mr. Haik foresaw the all around advantages of bulk methods and it was his initiative that brought about the bulk route. Mr. Haik started in business with one retail sales truck in 1936. Quality of product has been stressed all the way along. Until April 1, milk was picked up on the farms at night, brought into the pasteurizing plant and immediately pasteurized, resulting in milk of high quality. Because of this and other similar policies, the business has enjoyed a steady growth so that today, twelve retail routes distribute Green Valley Farms' products. Substantial sales are also made through a store on company premises.

This steady demand for Green Valley Farms' products has taxed manufacturing facilities. Last year Mr. Haik investigated the possibilities of the bulk system. He found that:

1. Cooling milk to temperatures below 40°F. on the farm would insure milk of the very highest farm quality. At these low temperatures, it would be feasible to pickup milk during the daylight hours.
2. Every effort must be made to encourage high quality milk on the farms. He felt that bulk equipment would further encourage the producers in this direction.
3. The space taken up by the milk receiving and other equipment geared to a can operation could be released for other purposes.

Now that the bulk system is in operation, the expectations have been largely fulfilled. For example, on two days in April when some milk was still coming in by cans, it was possible to compare the quality of can milk with bulk milk, as set forth in the table printed below:

What Producers Say About Bulk System

How have the producers liked the system? (All use bucket milkers and empty the milk through a strainer mounted on the tank cover.) This can be best summarized by the comments the farmers have made:

1. Leon Reeves on Mrs. Himmeline's Farm says: "We don't have to stand and wait for the cans to fill up. This method uses a smaller milk house."
2. Elmer Herman says: "I like the quick cooling. You don't have to

Photograph Courtesy Mojonnier Bros. Co.

Butterfat samples are taken at the farm by tank truck driver. One sample is left at the farm, the other is taken back to the plant. Accurate weights and reduction of shrinkage are two features of

Photograph Courtesy Mojonnier Bros. Co.

bulk handling that appeal to producers. Driver measures milk in tank and makes out duplicate slips, one for producer, one for plant. Measuring is done with a calibrated rod.

wonder about running cans over especially if someone is helping or if someone is talking to you."

3. Henry I. Coles says: "There are no heavy cans to handle. It is just a better cooling system. You don't have to cool cans to start cooling the milk. It is slower cooling with cans."

4. Don Jennings says: "This is the first break for the farmer. The milk is bought in the milk house. When the milk goes out of the door it belongs to the buyer, and I know exactly what I'm getting paid for."

5. Russell Prickett says: "I have always believed that the cover on the milk can clamps odors in. The agitator on the tank aerates the milk. This bulk tank eliminates the can cooler which gets dirty from spilled milk."

Milk is poured from the milking pail directly into the stainless steel strainer supplied with the tanks. Tanks on these farms are of 60, 100, 150, 200, and 300 gallon capacities. After sufficient milk is accumulated in any given tank, the agitator and the automatic freon compressor are started. The milk is cooled during the milking period and is usually down to 36-38°F. in from 15 to 60 minutes after milking. Milk is held over night at this temperature automatically, and the morning's milking is strained into the cold night's milk, with blend temperature usually 40-48°F. All milk is then cooled to 36-38°F. within 15 to 60 minutes after milking, and held at this temperature until tanker arrives for pick-up. Milk is picked up daily in a 3,000 gallon two compartment tanker. Each compartment holds 1500 gallons and one compartment is used for Guernsey milk, and the other for mixed herd milk.

The mechanics of the Green Valley Farms system of bulk handling follow the general lines of other operations in this field. The driver of the tanks takes the butterfat sample and ascertains the amount of milk in the tank. He uses a calibrated rod for measuring. A record of the amount of milk is left with the producer and

TANKER ROUTE REPORT - MAY 2, 1951

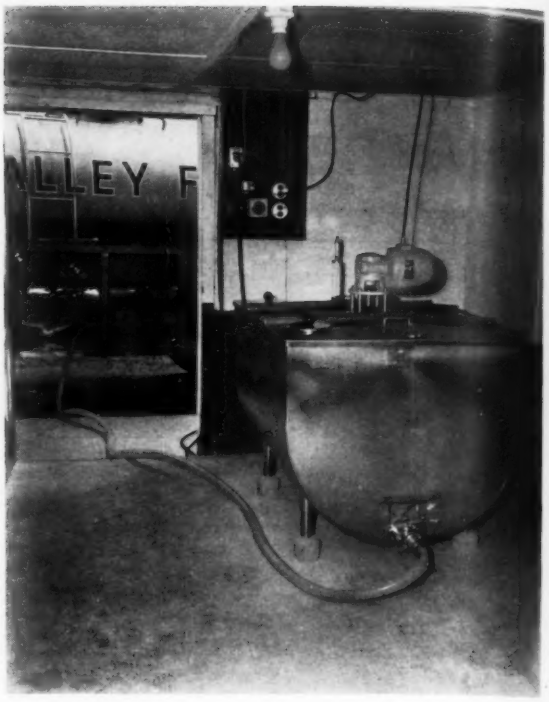
GREEN VALLEY FARMS - HADDONFIELD, N.J. J. L. Milloy, Driver, Weigher and Sampler

Farm	Address	Miles	Time Ar.	Time Lv.	Milk Pump Out Time In Minutes	Total Time at Farm	Size Farm in Acres	No. Cows Milked	Owner Milks Yes-No	Hired Help Yes-No	Temp. Milk In Tank°F.	Lbs. Milk In Tank	Rated Capacity Producers Tank in Gallons
Leave Dairy		0		10:00¼									
Wm. Neuber	Marlton	11	10:18¼	10:33¼	2	15	145	15	Yes	Yes	38	331	100
Russell Kumpel	Vincentown	18	10:46	10:58¼	1¼	12¼	100	15	Yes	No	35	438	100
Henry Worrell	Medford	21	11:04	11:18	6	14	150	36	Yes	Yes	36	986	150
Geo. Simons	Vincentown	22	11:22	11:38	4¼	16	115	36	Yes	No	40	957	150
Elmer Herman	Vincentown	24	11:44	11:52¼	1¼	8¼	127	22	Yes	No	38	425	100
R. A. Schultheis	Vincentown	24¼	11:53¼	12:04	Note 1	10¼	87	15	Yes	No	Note 1	344	100
Walter Scott	Vincentown	26	12:10	12:21	4	11	140	26	Yes	Yes	38	744	150
Green Acres Farm	Vincentown	29	12:29¼	12:41¼	3¼	12	218	28	No	Yes	36¼	774	200
Henry I. Coles	Vincentown	31	12:47	12:56	2¼	9	22	14	Yes	No	37	381	60
Chas. E. Davis	Vincentown	32	1:00	1:12	4	12	173	33	Yes	No	37	993	200
Don Jennings	Vincentown	32¼	1:10¼	1:20¼	4¼	16	300	42	Yes	Yes	37	907	200
Bernard Pinder	Vincentown	33	1:29	2:00	Note 2	31	150	22	Yes	Yes	37	491	100
J. Warren Scott	Medford	38	2:19¼	2:31	3¼	11¼	111	19	Yes	No	37	703	150
Mrs. M. Himmeline	Medford	41	2:37	2:50	4¼	13	400	48	No	Yes	39	993	200
Howard Clark	Medford	42	2:55	3:05	3	10	118	22	Yes	No	36	659	100
Russell Prickett	Marlton	50	3:27¼	3:44	5	16¼	180	45	Yes	Yes	36	1152	200
Arrive Dairy		56	4:02¼										
Average							152	28			37°F.		142

Note 1 - Not available

Note 2 - Milk had onion odor and after discussion with producer, it was rejected as unsuitable for tanker pickup. Milk was later canned off and trucked in.

Measurement is made by means of a steel rod calibrated for each individual tank. Note vat type of tank used on this particular farm. Another type of tank is shown in subsequent photographs.



A plastic hose is used to make the connection between farm holding tank and tank truck. Arrangement of pump on truck and hose connection can be seen in photograph.

a duplicate goes to the milk plant. The driver is also responsible for rinsing the producer's tank with water after the milk has been pumped out.

The pumping is done by a fast acting positive type pump. A length of Tygon transparent tubing is used between the pump and the cold-wall tank. In operation the pump draws the milk out of the tank and sucks practically all of the milk out of the Tygon tubing. After the pumping operation is completed the driver disconnects the tubing at the holding tank and places a cap over the open end. The truck end of the hose remains connected. The tubing, being flexible, is rolled up and stored in the pump compartment. Residual milk remains in the tube between stops.

Washing the farm tank is not a difficult nor a time consuming operation. The tank truck driver rinses the tank out with water. This rinse is followed later by a thorough scrubbing in which warm water and a detergent are used. This is done by the farmer. Just before the equipment receives milk it is sanitized by brushing a disinfectant over the stainless steel surfaces. The entire cleaning operation is completed in a matter of minutes.

Eleven producers operate grade herds, five operate registered herds. The famous Glenwood Girl line in the Guernsey breed originated at Haddon farms operated by Russell Prickett. It is said that 75% of all registered Guernseys in the United States trace to the foundation cow, Imperial Glenwood Girl 1693, dropped on February 7, 1884.

Wild garlic grows rampant in New Jersey in the spring. How about garlic flavored milk? Elmer Herman says that if there is garlic in the pasture, garlic flavor in the milk can be controlled by bringing the cows in two hours before milking. Leaving cows on pasture all night will cause trouble if garlic is found in the pastures.

To date, garlic flavor in the milk presents a seasonal problem on two farms only and Green Valley Farms believe that control is dependent on improved farm management. Green Valley Farms pay $5.87 per cwt. for 3.5 test milk, with 6 cents per point of fat. 4% milk is paid for on the basis of $6.17 per cwt.

How Bulk System Benefits Pasteurizing Plant

Green Valley Farms have always hauled their own milk and they own the bulk tanker. As part of the program for encouraging quality production and satisfied producers, Green Valley Farms have hauled milk at the lowest possible cost and under the bulk program, the hauling rate has been reduced from 15 cents to 10 cents per cwt. for a three year period. Also, in assuming leadership for setting up the bulk route, they agreed to help producers in the following ways:

1. Green Valley Farms agreed to fix up driveways for the tanker where needed. Most driveways required no work.
2. Green Valley Farms agreed to assume the cost of labor and materials for installing the stainless steel tank and condensing unit, the latter two pieces of equipment being owned by the producer.
3. Green Valley Farms agreed to co-

(Please turn to Page 61)

QUALITY COMPARISON BETWEEN CAN MILK AND BULK MILK RECEIVED BY GREEN VALLEY FARMS

Date	Classification of raw milk in pasteurizing plant	Temperature °F.	Plate Count
April 10	Dumped can milk	52°	200,000
April 11	Dumped can milk	45°	160,000
April 10	Bulk milk in tanker	39°	Under 30,000
April 11	Bulk milk in tanker	38°	Under 30,000

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Above, one of the Rowe Automatic Milk Vendors at Cornell University. Dr. Paul E. Ramstad (right) of the School of Nutrition puts in a dime for Ethel Olsen. Standing by, enjoying a mid-afternoon snack, are Mrs. Monroe of the scheduling office, and Cy Crowe, assistant state extension leader.

The Boston Post
Established 1831
The Independent Democratic Paper of New England
(Issued daily by Post Publishing Co.)

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A coin in the proper slot promptly delivers a half-pint cardboard container of milk, plain or chocolate flavored. Sales are heavy, and if milk will serve to better the health of Cornell students, there seems to be no further cause for concern in that direction. Maybe, it is the novelty of the machines; maybe, the selling volume can be traced to their silent appeal. The vending machine has gone a long way since the day when it only sold gum.

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BULK HANDLING OF MILK — CONNECTICUT —

By NORMAN MYRICK

THE ROLLING hillside pastures of Columbia County in eastern New York State are dotted with dairy cattle. A scant eighty miles from the great metropolitan area, fifty miles from Albany, sixty miles from Hartford, Connecticut, a land watered by a thousand rollicking brooks, lies some of the finest dairy country in the world. It is, indeed, a land of milk and honey.

Most of the milk from this area goes to New York City. Some of it, however, goes from the cow into a cold-walled farm holding tank where it is held at 38 degrees F. until a tank truck picks it up and takes it to the plant of Bryant and Chapman, a subsidiary of the National Dairy Products Corporation, in Hartford. It is this farm-tank truck pickup that makes the Bryant and Chapman operation one to remember.

The Bryant and Chapman bulk handling program has been in operation a little more than three years. It was proposed back in the early forties but was held up during the war years. During the latter part of 1947 the plan emerged from its cacoon of drawing boards and conferences into a reality. Farm cooling tanks were placed on eight farms and a tank truck began a regular system of daily pickups. Most of the farms were large producers ranging from 12 to 30 cans of milk a day. The producers were all good producers but, with one exception, they were not show places.

The results of this experimental route, both from the dealer's and the farmer's point of view were excellent. The Bryant and Chapman people found that they secured a superior product. The farmers were particularly pleased because the old sore points of butterfat and bacteria tests plus disputed weights were immediately eliminated. Butterfat samples were taken in the presence of the farmer and a sample was left with him for checking if he so desired. Measurement of milk was also done in the presence of the farmer and the milk became the property of the milk company once the driver began to pump the milk into the tank truck.

In spite of these encouraging experiences there remained a number of problems. Bryant and Chapman made no bones about the quality of the producers on the experimental route. The producers were good ones, carefully selected. The question that arose was this: Will the system work with producers who are not hand picked and who do not make large quantities of milk? Another question referred to accessibility in the winter time. What about getting the tanker up to the milk house when there is heavy snow or a bad ice condition? A third problem concerned the farmer's ability to clean the holding tank properly. Un-

Photograph Courtesy Bryant and Chapman

Tank truck is spotted close to milk house. Power connection and hose can be seen at rear of truck. Slung underneath the trailer between front and rear wheels is insulated ice box in which butterfat samples are carried.

Photograph Courtesy Bryant and Chapman

One of the important results of the farm holding tanks has been an improvement in the appearance of milk houses. This milk house is a good example of what happens. Driver of the tank truck is shown taking a butterfat sample.

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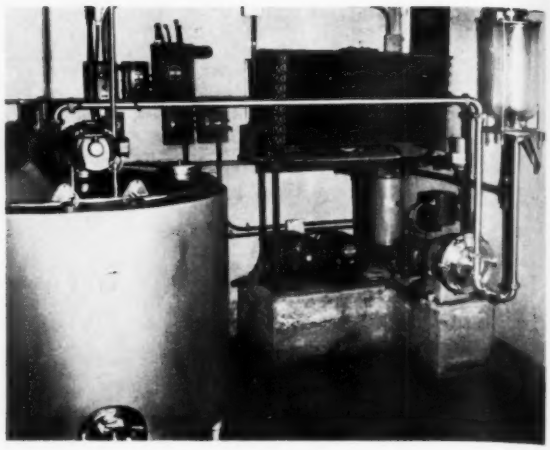
The large, slow speed agitator was the solution to good circulation of the milk without churning.

Some tanks (right) are circular cold walled tanks such as this one. Note pipe line milker connected directly with tank. Milk does not have to be carried but is piped direct from cow to tank. An in-line cleaning operation is involved in this arrangement.



satisfactory milk raised still another question. In a can operation the cans are checked individually as they come on the deck. In a tank operation the entire tank is either accepted or rejected. What about mixing the milk from several producers in one load? Would not an entire tank load be jeopardized by one tank of poor milk?

Three Year Trial

These were all sound questions that could only be answered by experience. Today, after a three year trial they are reasonably well answered. Producers are, if anything, even more enthusiastic. Bryant and Chapman is getting top quality milk and has not had a single rejection during the three year period. The original eight producers have grown to sixteen and, in a few weeks, twelve more producers will replace their can coolers with farm holding tanks. This will make it necessary to put on a second tank truck and establish a second route.

Accessibility has not been a problem. It is quite true that none of the farms on the tanker route are as remote as one might find in up-state New York or Wisconsin or Minnesota. On the other hand, Bryant and Chapman officials point out that modern snow removal equipment will open up roads with a speed unheard of a few years ago. They have not experienced any difficulty in getting to the milk houses.

Average producers, even below average producers, are now using the farm tanks. A Bryant and Chapman official said, "We realized, of course, that the original group of eight good producers were not a fair test of the tank truck idea. When we had tried out the idea on the good ones and worked out the mechanical bugs we had to put on the average producers in order to see whether or not the tank truck would work as a general proposition. This we have done. So far the results have been very satisfactory. We are getting a high quality milk. Farmers are doing a good job of cleaning the tanks. When the new route goes into operation in a fewweeks nearly a third of our milk supply will be handled under this farm tank system."

High Quality Milk

One of the most important reasons for the success of the Bryant and Chapman operation has been the philosophy behind the idea. What the Hartford concern was after was a high quality raw material. In order to get this type of milk they wanted rapid cooling, careful productive techniques by the farmer, and a completely sanitary operation. They were very definite, when talking farm tanks to producers, in pointing out that the system was no short cut to low bacteria counts or top quality milk. They emphasized that more care rather than less was involved; that the entire day's production of milk was at stake rather than just one or two cans. To this observer, the response of the farmers to the proposition, has been the most remarkable feature of the project. Whether it was because the stakes are higher or because the equipment is conducive to better management or because of better supervision the fact remains that the farmers are producing better milk.

The mechanics of the tank truck pickup are still basically the same. There have been some improvements and alterations in methods but the fundamental idea of a stainless steel refrigerated holding tank in the milk room and a tank truck with pumping facilities to transfer the milk from farm tank to truck is the same.

Cold-walled Tanks

Originally the farm tanks had a direct expansion surface cooler. The milk was poured through a filter on to the surface cooler. An agitator, mounted at an angle and operated either manually or automatically, circulated the milk. There were two difficulties with this arrangement. If the producer did not make enough milk to reach the surface cooler a large part of the refrigeration was lost. Furthermore, the direct expansion surface cooler, while not insurmountable as a cleaning problem, did offer another item to be cleaned. The surface cooler was eliminated by using cold-walled tanks with the entire bottom surface refrigerated. This insures maximum use of the refrigeration system and regardless of the amount of milk in the tank it will be adequately refrigerated. Milk is cooled to 40 degrees in a matter of minutes and is usually around 38 or 39 degrees when picked up by the truck.

The agitator presented another problem. The relatively small agitating surface made it necessary to use fairly high speeds in order to gain proper circulation. This caused a certain amount of churning. The solution proved to be a vertical agitator with a large surface, moving at a slow speed. This agitator operates both manually and automatically and has not given any trouble with churn-

(Please turn to Page 58)

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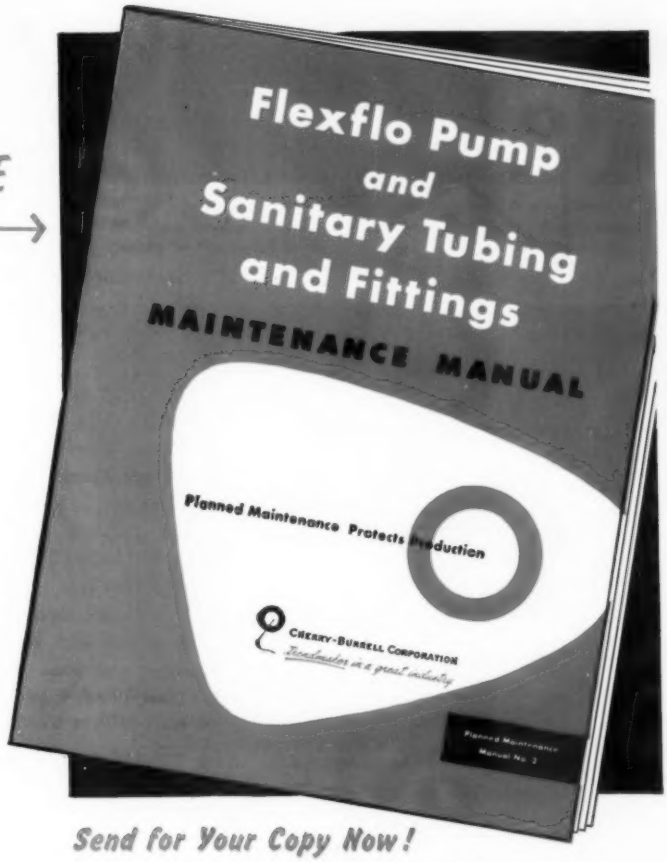

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BULK HANDLING OF MILK — CALIFORNIA —

By C. B. A. BRYANT
Johnson & Johnson Co.

LOS ANGELES CITY proudly "boasts" it has the best flavored milk, greatest per capita consumption of milk, and the largest production per cow of any place on earth.

Several factors contribute to the reality of this "boast." Cows are fed excellent concentrated foods, supplemented by alfalfa, raised on the vast irrigated up-state areas. There are no pastures of obnoxious weeds. This alfalfa is hauled in on large trucks and trailers carrying as high as 20 tons to a load.

The cows are kept in corrals in groups of 35 to a corral, called a "string." Here they are fed and watered. The concentrated grain is fed just before milking. A pasture is an oddity. I have gone down a road in the vicinity of Artesia, California, and in the distance of approximately two miles, visited twenty dairies, each milking some 100 to 1,000 cows. These cows are all big milkers.

The dairies are practically factories with spacious warehouse facilities. All of these cows give well over 50 pounds of milk per day. Most cows are imported about their fourth or fifth lactation. Very few heifers are raised. Replacement cows come from Utah, Idaho, Colorado, and some as far away as Missouri and Wisconsin. Holsteins predominate but many other breeds and half-breeds are seen. The ability to produce seems to be the determining factor of any cow being fed and milked.

Milk of good flavor, with a low bacteria count and high production per cow, is the goal. The calf is of little interest and is passed along immediately. Milk is what is wanted.

To obtain such a quality product and handle the high production efficiently, modern mass production methods are used here on a large scale. An attractive architectural style has been used in the designing of milking parlors. Grounds are beautifully landscaped and excellent use is made of the colorful flowers that abound in Southern California. The homes of the dairymen, equally well designed and landscaped, are near the highway. The corrals are always in the rear. These corrals are about 60′x 80′ for housing 35 cows. The milking parlors usually handle two "strings" at a time. Two rows of cows are tied up head to head with a feeding lane between the rows. Some of these dairies have sufficient land so that each string of 35 cows has a grass plot where they spend their time between milking. However, most of the corrals are smaller and bare. During the dry season these are scraped three times a week. During the rainy season (a very few consecutive weeks) Pacific Ocean sand is spread over the corrals to help soak up the water. The corrals are still a problem but steps are being taken to master the situation. Extra attention is given to preparing the cows for milking during the rainy season.

Part of the landscape are the massive stacks of baled alfalfa hay. Many of these stacks are in the open without top or cover. Some of them are a city block long, a quarter of a block wide, and about a hundred feet high.

Milking By Shifts

Most of the milking is done by machine but it is not uncommon to see old fashioned hand milking. On some places both hand and machine milking takes place. The milkers work in shifts so that on some of these mammoth milk producing establishments milking is going on 20 out of 24 hours a day.

Statistics for 1949 indicate that in this area, about 50 miles in diameter and only a short distance from Los Angeles, some 1300 dairies were milking cows. There were 163,000 milking cows on these farms. Replace-

Photos Courtesy McHale Manufacturing Co.

These two pictures were used last month but they are so applicable to the present story that we have taken the liberty of using them again. Photograph at left shows milk being pumped from tanker into holding tanks at Arden Farm's plant. Picture at right illustrates system of bulk measurement based on the specific gravity of the liquid to be measured. Readings are taken from liquid level gauges.

ments for 1949 totaled 72,000. On the basis of number of replacements, cows last about two and a fraction years on these dairies. There are approximately 500 farm holding tanks on these 1300 dairies. Individual farm tank trailers and farm tank trucks have been installed for handling milk at the farm.

Most of the producers selling milk in the Los Angeles area have their own tank truck or tank truck trailer. The tankers have a capacity that varies from 2500 to 4000 gallons. Each is equipped with a powerful positive pump located in a special compartment behind the cab and under the tank on the truck. A two inch flexible rubber hose is used to make the connection between the farm tank and the tank truck.

The farm holding tanks are of two types, cold wall and thermos, with about half of each type making up the total in use. Many of the tanks have thermometers hooked up with charts to record the temperature variations. Some of the tanks are the same as those used in the milk plant for holding milk.

Two methods of measuring milk are employed. Some tanks have a one inch glass tube on the outside which gives a direct reading of the amount of milk on the inside. Other tanks have metal rods calibrated to their own individual capacities.

Photograph Courtesy Johnson & Johnson

Use of filter discs in the bulk handling operation is studied by two California producers. Manuel Rodriques, third from right, and John Rodriques, extreme right, check their workmanship with "Bill" Bryant, extreme left.

The transfer of the milk from producer to distributor takes place when the driver of the milk tank truck leaves a slip with the producer giving the driver's reading of amount of milk in the farm holding tank and the recorded temperature of the milk. The driver agitates the milk for two or three minutes with the mechanical agitator with which each tank is equipped. When thorough mixing has taken place a butterfat sample is taken. This is done each day.

Samples for bacteria count are taken by fieldmen from milk companies receiving the milk. Representatives of the county and city health departments also take samples for bacteria count.

Advantages and Disadvantages

This method of handling milk has revealed many advantages. It has also produced new problems. Milk cans are washed and sterilized at the milk plant. Sediment, quality and flavor are checked by platform inspection. With the new method the milk from several different dairies comes to market in the same truck. More tank trucks must be washed and sterilized.

XUM

Matter of Fact
BY EDWARD A JOSEPH
MILK
FROM
14 TO 58 PER CENT
MORE
MILK
IS BEING CONSUMED IN AMERICAN CITIES NOW THAN IN
1940
A HOLSTEIN COW OWNED BY H.W. WARD OF STERLING, ILL. HAS SET A RECORD OF
149,708 POUNDS OF MILK
AND 4918 POUNDS OF
BUTTER-FAT
PRODUCED IN 10 YEARLY MILKING PERIODS
A COMBINATION
MILKING STOOL, PAIL AND STRAINER
NOW ON DISPLAY AT THE GWINN COLLECTION – PENNBROOK MILK CO. OF PHILA. SHOWS THE INGENUITY OF THE MILKMEN AROUND CASHTOWN, PENNA. IN THE YEAR OF 1860

Tanks at farms must be washed and sterilized.

Sediment is a good illustration of this problem. When sediment from the milk taken from one of the tank trucks shows on the milk plant filter or clarifier the question immediately arises, from which of the four or five farms whose milk made up the load, does the sediment come? It is a question that cannot be answered once the milk is in the tank truck. The author and his junior associates helped introduce a plate type filter, filtering upward, using fibre bonded single service discs. A valve was placed in the line just beyond the pump from the receiving tank and below the filter, and another in the line above the filter. This made it possible to close those valves at any time and take the filter out to disassemble and observe the discs. Filtering upward, the pump, not needing to be of such capacity as in a milk plant to produce pressure, let the heavier material (if any in the milk) settle on the metal plates of the filter. Only the lighter sediment lodged upon the single service cotton sheets. Thus the preparation of the cows before milking could be observed. After first observations by milkers it was noted that succeeding occasions showed much less extraneous matter. Many sheets were clean showing these used discs as an excellent "Badge of Merit." This showed how better preparation made it possible to have clean discs during the rainy season when corrals were wet by surface water. It also demonstrated that in addition to the "hose down" a sanitized wipe was desirable. The expression "hose down" means the washing of the cows by a stream of water (70° as it comes from the earth in Southern California) out of a hose, squirted upon their hindquarters, udders and teats.

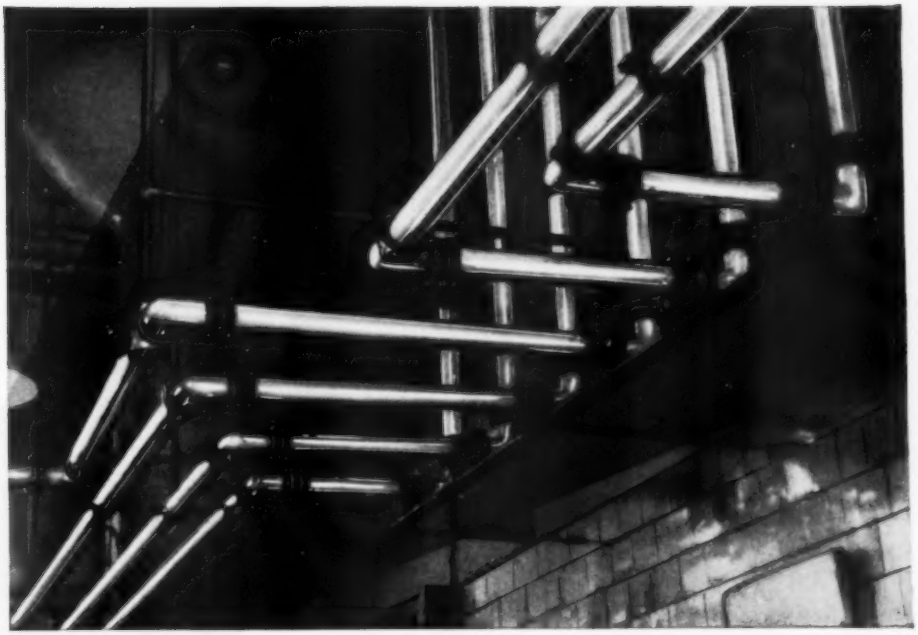
Each milk house or milk room is separate from the milking parlor. Milkers do not enter the milk room to empty buckets of milk from the cows. A holding tank is in the milking parlor along the outside wall of the milk room. Here the milk is emptied from the milk buckets, pumped through a pipe which passes through the milk room wall carrying the milk up over a surface type cooler having a trough strainer above it using a strip of fibre bonded single service cotton, flowing over the surface cooler and into milk cans placed in under this surface cooler. If a farm holding tank is in use the milk goes through the filter just above the receiving tank, over the cooler, and into the holding tank. If the holding tank is a cold wall type, milk goes directly from the filter into the tank.

Milkers With Tails

One of the amusing sights to visitors are the tails at the seats of the milkers. These milkers are continually getting up from a sitting position during these operations. The tails are one-legged pipe stools, with a fibre board shaped seat. They are strapped to the seat of the user. On the other end of the pipe they have a coil spring which helps ease the sitting down as well as providing an assist upward.

Many of these farm dairies still ship in milk cans. A pick-up by a regular truck, frequently from only four or five dairies, comprises a load of 240 to 260 cans. Farm dairies having tank holding equipment but no tank truck or trailer have a tank truck pick up their milk each day. The farm dairies have the responsibility for cleaning and sanitizing the tanks. All milk put into the tank must be of equal quality in order to prevent losing a complete tank of milk.

Because of this concentration in this area for milking cows and the capacity of each dairy, the farm holding tank installation is gaining. In a short time this perhaps will be the only system for handling milk in this area.



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You can check for cleanliness, too . . . look at each line, see that it is absolutely clean. The microscopically smooth surface of PYREX pipe remains free of pitting, retards the accumulation of milkstone. Chemically stable glass pipe has no effect on milk flavor.

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WASHINGTON REPORTER

By H. E. CHRISTIE

Tin to be Available for Milk Cans

The National Production Authority acted May 31 to protect the bulk of the 1951 milk pack. It made available to the industry a more adequate supply of tin which could be used to make cans holding less than five gallons of powdered whole milk.

The action came as an amendment to M-25, the tin can order. It permits use of .25 tin plate for small powdered whole milk cans until July 31, 1951. Previously the order had limited use of tin plate to one end only on such cans, with the rest to be made from blackplate.

The date, July 31, was selected because NPA believes the bulk of the season's pack will be processed by that date.

The order covers dry whole milk only. Manufacturers of dry skimmed milk must continue to use the blackplate except for one and in its smaller-than-five-gallon containers.

NPA further stated that blackplate containers have not been proven by actual consumer tests, but that the tight supply makes it mandatory that this regulation be carried out.

Other provisions of the amendment of interest to the dairy industry are: (1)—dry-milk base has been added to the unlimited tin-plate preference A quota for baby foods; (2)—the unlimited .50 tin plate list of items was increased to include five gallon or fifty-pound containers for dietary dry milk base products. Small containers using .25 tin plate were also added for this product.

More Farmers Keep Herd Records

The Bureau of Dairy Industry (USDA) reported that during the first three months of 1951 more farmers kept herd-records for dairy herd improvement purposes than at any previous three months on record. A total of 133,552 milk production records were received during the three-month period, with New York leading the states with 27,654. Other states with more than 10,000 reports were Pennsylvania (10,193) and Wisconsin (20,260). Wisconsin led all states in percentage of dairy herds being tested with 23.8%, followed by Vermont with 22.2% and New York with 21.5%.

Mr. J. F. Kendrick, head of BDI's Division of Dairy Herd Improvement Investigations said that this upturn in number of herds being tested was an indication of more and better milk for the future.

Bottle Shipments up 27% over 1950

The Bureau of Census *Glass Containers* report, just released, indicates that the number of bottles of all kinds manufactured as containers jumped 27 percent over the same month of 1950, and 19% over the previous month. Figures were through March, 1951.

Included in the totals were 313,313 gross shipped for use in the dairy industry during March, 1951, as compared to 285,317 gross for February, 1951 and 276,880 gross for March, 1950. In actual production, March, 1951 totals were 325,716 gross; while stocks on hand at the end of March available for shipment were 303,805 gross.

Washington's Thompson's Dairy Marks 70th Anniversary

Seventy-five invited guests were present at a special luncheon in the Thompson's Dairy plant at 2012 Eleventh St., NW, in Washington, to help mark the 70th anniversary of one of the oldest dairies still in continuous operation in the East. Served at the luncheon was a dairy and dairy products meal, with plenty of milk, butter, cottage cheese salad, and whipped cream dessert. An open-house at the company's plant, with the public invited to come and inspect from 6:30 pm to 9:00 pm also marked the day.

On the program at the luncheon were songs by the D. C. Keys, dressed in striped blazers and plaid trousers. Girls in bright 1880 costumes greeted the guests and made them feel at home. Photographs of the early plant and of the dairies where it obtained milk were used as decorations.

Arthur L. Thompson, president, told the group of the company's founding. He recalled that in February, 1881, the company started business with one blind horse pulling the company's single wagon. It was not until five weeks later that deliveries reached 15 gallons a day. Today 161 routes deliver 27,000 gallons of milk daily.

Labor Relations Board Ruling on Blue Ribbon Creamery

In a petition to determine the group of employees who would vote to select the type of representation to be used by the Blue Ribbon Creamery of Jackson, Mississippi and its Newton, Wesson, Natchez, Greenville, and Vicksburg (all Mississippi) substations, the Labor Relations Board ruled that a group of temporary employees hired each season for laboring work during the ice cream season, and who worked an average of 60 days per year, should be excluded. The reason for the decision, which may prove applicable to other plants in the dairy industry, was that "No claim was made . . . that these employees can reasonably expect to be rehired from year to year . . . As they are temporary employees, we find, in accordance with Board practices, that they do not have a sufficient interest in the selection of a bargaining representative, and that they are therefore, ineligible to cast ballots in the election directed herein."

Ex-Milkman Wins Heroism Award

Jesse L. Boyd, now in the Navy, has just received a civilian award won

"... We have found both of these crates to be the most sanitary cases available. They are absolutely sanitary. They can be easily cleaned and disinfected."

"... It is the most sanitary crate on the market, being kept grime-and-odor-free by virtue of its zinc coating, which prevents rust and crevices that would otherwise harbor bacteria."

"... The ——— City Health Authorities have put their approval on these steel crates due to their sanitary features in cleaning, and owing to the fact they will not rust."

WHEN YOU USE UNITED STEEL MILK CASES

Sanitation is Simple

... say these users

"... We find that the wire cases with the galvanized finish are not only much lighter and cheaper to use, but also more sanitary."

"... we have been using wire cases exclusively for a long period of time because of the sanitary features, light weight, and long life of these wire cases."

United Steel Milk Cases *are* more sanitary because there are no crevices in which bacteria and vermin can hide . . . no place for refuse to cling. United Cases are quickly, efficiently cleaned . . . they dry quicker . . . never rot, because they can't hold moisture. There are other reasons for dairymens' preference for United Cases:

1. They're lighter in weight, a lot less bulky. This makes United Steel Cases easier, faster to handle, cuts handling costs to a minimum.
2. They're economical . . . in first cost, in replacement cost. United Cases are stronger, last longer — you spend less than half as much for United Cases in a ten year period.

You can prove these facts to yourself through use. For full information write Dept. AM.

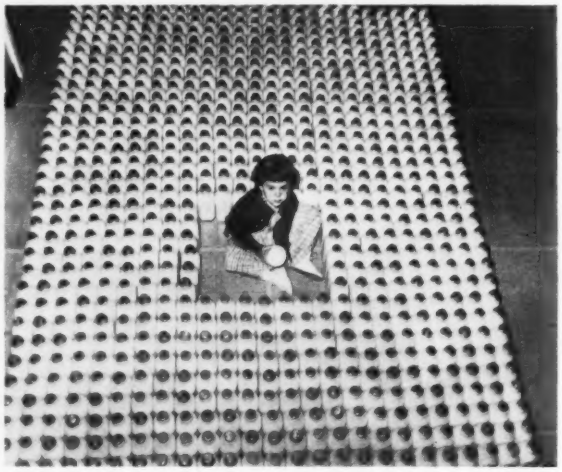
Names of letter writers on request.

UNITED

STEEL AND WIRE COMPANY

BATTLE CREEK, MICHIGAN

Manufacturers of Crates . . . Carriers . . . Icing Trays . . . Ice Cream Equipment



"I like milk but I can't drink it all" says Penny Bulkley, 4 years old. Penny is a resident of Mooseheart, Illinois' famous "Child City." The occasion for the picture was a June Dairy Month celebration. Penny is surrounded by 758 quarts of milk that makes up the milk supply of this unusual city. A champion herd of purebred Holsteins produces a quart of milk per day for each member of the "city." Obviously the young lady got in. Question is: How will she get out?

for heroism while delivering milk for Thompson's Dairy, of Washington, to the home of Mrs. Maude Adams, of Vienna, Virginia. He arrived just as a kerosene stove in Mrs. Adams home exploded, beat out the flames, and prevented loss of life to the family. His award is one of 10 presented by the Milk Industry Foundation annually, the Pasteur Medal Awards.

Situation Reports

The Bureau of Agricultural Economics, in its Agricultural Outlook Digest, says that farm production is likely to set a new record for 1951, and that sales of farm products may yield about 23% more to farmers in 1951 than in 1950. They also report that farm costs are expected to increase; but not as much as incomes; and estimates the 1951 total net farm income at approximately 17.8 billion dollars. This compares with the 13-billion net farm income actually produced in 1950.

On specific commodities, the report indicated that demand for dairy products has strengthened in recent months, and is expected to strengthen even more. Consumption of fluid milk is expanding despite the fact that retail prices are averaging 10% above 1950. Prices of manufactured dairy products are also up an average of 10%, while supplies available for sale are running at last year's level, so an indicated 10% increase in income from sale of dairy products is recorded.

About 2 million paper cups, paper to pass on to retailer or consumers plates, and other paper containers are to be stockpiled in the Washington, D. C. area, according to civilian defense authorities. It is part of a 25-million paper container storage program for the entire nation. In announcing the program, local civilian defense officials served a luncheon from paper containers such as would be used. Milk was the beverage served, an indication that milk and milk products also have an important part in the C-D program. They don't plan to stockpile 2-million cups of milk, however. Part of the day's program was used to explain that arrangements were now being made with local sources of supplies to make sure that abundant milk and other essential foods would be on hand if the emergency developed.

Parity Adjustment for Farm Cooperatives, Producer-Processors

The Office of Price Stabilization has amended CPR-22, the Manufacturers Ceiling Price Regulation, and GCPR-Amendment 10, the Agricultural Commodities Parity Order, to permit producer-owned cooperatives, processors who produce their own agricultural commodities, and processors who operate on "open" price or deferred payment contracts to adjust their ceiling prices on products containing below-parity commodities.

The two earlier orders which this amends have a "pass-through" provision which enabled the manufacturer certain of the added costs which have developed since his base period. In the case of the groups covered by this latest amendment, this "pass-through" provision did not help, since there was nothing to pass on through or to hand on. The processor is also the producer, and by the earlier orders he was able only to sell at his base period despite the fact that he was competing against firms which were allowed to pay higher prices and pass on the added cost.

The earlier orders were also unworkable for this special group because they had no definite way of measuring increased costs to them. Other firms could show the difference between invoices of the present and their base period to prove that the milk or cream had cost them more. This special group used their own at both times, couldn't prove an increased cost to them.

The amendment allow the listed groups to calculate a "pass-through" or "material cost adjustment" figure by using prices of their nearest competitor as a basis. Producer-owned cooperatives may increase their ceiling prices, so long as the commodities are listed as being under parity, provided they pass back to producers the entire dollar-and-cent per unit amount of the increase. This prevents increases in the processing margin of cooperatives but the producer is not stopped from realizing a return equal to parity on the raw commodity.

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When you're looking for speed on the bottling line, there just isn't any filler that can match Cemac . . . no matter what products are being run.
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How close does your filler come to these average CEMAC speeds?
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HOMOGENIZED MILK . . . . . 130 BPM
CHOCOLATE MILK . . . . . 125 BPM
20% CREAM . . . . . 120 BPM
NOTE: These are rated capacities for Cemac 28 . . . but they are exceeded in dairies from coast to coast, throughout the daily run.
Cemac Fillers are still coming off the production line. Some models are available for immediate shipment. Ask your Crown Representative how soon you can get yours.
Cemac VACUUM MILK FILLER
The Greatest Performer of them all
BUILT IN TWO SIZES: CEMAC 14 AND CEMAC 28

Let's Talk Accounting

By JIM KLUGER

The Nature of Profit

AT THE TAIL END of a profit and loss statement we usually find a caption entitled "Net Profit" which purports to tell the amount of net profit or net income earned during the period covered by the statement. An accounting professor once told a freshman class "God makes the gross profit, the accountant makes the net." That was a masterpiece of understatement. He meant, any profit and loss statement is so filled with figures that are estimates, opinions, or, at worst, guesses, that the apparent accuracy due to arithmetic exactitude is quite misleading. There have been many attempts to define "net profit" but they all fall short in one material way or another.

The only true way in which net profit can be measured is from beginning to end of a business' life span. You start with so much money. You withdraw so much over the life of the enterprise, you realize so much on final liquidation. What you finally realize, plus what you've withdrawn, less what you started with, is the exact net profit earned in dollars over the entire life span of the business. Go a step further and adjust for inflation, and you'll have the net profit in terms of the purchasing power of the original investment. This net increment is the only true net profit. We accountants, realizing that you can't liquidate every December 31st and start over again January 1st, have to attempt to measure profits periodically by some other means.

The way to make a profit, as anyone knows, is to buy low and sell high, preferably in the same kind of dollars. In between those two points, however, you've got to pay wages, pay rent and depreciation, pay taxes, buy supplies, equipment, pay for credit, provide for credit losses. It's quite easy to measure the money taken in for sales and paid out for wages, interest, rent, and the like. But the exactitude of measurement stops about there. Only an opinion can be expressed with regard to depreciation. No one can know just when a given piece of equipment is going to stop functioning and require replacement. Nor can anyone foretell what technological advances will make a present machine obsolete before its normal useful life is finished.

Jim Kluger, specialist in dairy accounting, conducts his exclusive column in the "American Milk Review" each month. If you have an accounting problem or simply an accounting question write to Mr. Kluger at Kapleau, Kluger & Company, 1414 South Penn Square, Philadelphia, Pa. He'll do his best to give you the straight dope.

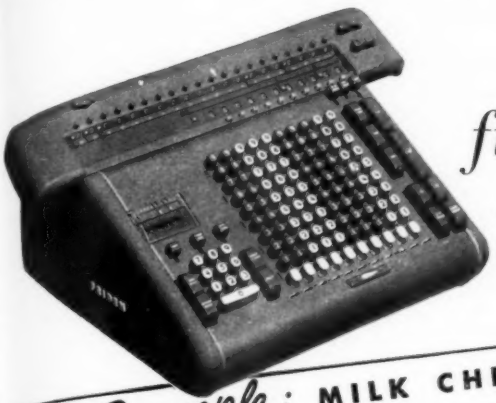
Even if we could determine accurately the point of no further productivity, we would still have to estimate how much is used up periodically. Another matter of opinion is credit losses. Informed opinion, true, but still opinion. It cannot be determined who is and who isn't going to pay his bill. Bad debts must, therefore, be periodically estimated for profit and loss determination purposes. Fortunately inventory valuation doesn't plague the fluid milk dealer too much, but it plagues almost everyone else, including storers of cream, cheese, powder, etc. To properly arrive at a profit figure for any period, we must assign some value to stock on hand. Fluid milk, to be sold the next day, is quite easily valued. But who knows what the future market may be on stored products? That old bugaboo, contingency, rears up in any profit and loss statement. Whether expressed in the statement or not, contingencies happen, sometimes with drastic impact on profits. All these things must be estimated and provided for in order to arrive at "net profit" for a period. And having arrived at a figure, which looks pinpointed but isn't, you've got a sum, expressed in some kind of dollars. What kind? We don't know that either. If the profit should be represented by cash on hand or in the bank, the dollars are current fifty cent ones, worth the current purchasing power of a dollar. If the profit is tied up in other things (refer to "What Happens to the Profits"—*AMR* December, 1950) such as accounts receivable, inventory, equipment, the dollars are worth only

(Please turn to Page 59)

Let the Friden *Man show you*
how to Speed up and Simplify

Milk Plant Figure-Work

with the Friden *fully-automatic* Calculator –The Thinking Machine



Example: MILK CHECK REGISTER *Calculations*

POUNDS OF MILK	TEST	POUNDS OF BUTTERFAT	PRICE	GROSS AMOUNT	DEDUCTIONS BUTTER POUNDS	DEDUCTIONS BUTTER AMOUNT	DEDUCTIONS OTHER MERCHANDISE	NOTE ACCOUNT	AMOUNT OF CHECK	CHECK NO.
218	3.9	8.50	.96	8.16	2	1.56	.95		5.65	3126
346	4.2	14.53	.96	13.95					13.95	1578
									.94	1587
140	3.6	5.04	.96	4.84	5	3.90				
TOTALS	19008		655.64		629.41	26	20.28	7.59	18.11	583.43

In one continuous operation, the Friden multiplies milk pounds × butterfat test, obtaining butterfat pounds . . . multiplies butterfat pounds × price, obtaining gross amount . . . subtracts deductions from gross amount, obtains net amount . . . accumulates totals of both butterfat pounds and individual check amounts

NO SPECIAL operator training is needed to work your figure problems on a Friden . . . because this amazing, fully-automatic Calculator actually "thinks" out answers for you. Watch the Friden figure farmers' payroll and drivers' load sheets. Put it to work on cost proration, discounts, payroll calculations, etc. By cutting figuring costs, a Friden Calculator *pays for itself!*

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THE THINKING MACHINE OF AMERICAN BUSINESS

WHY SOME TRUCKS and BODIES COST LESS to MAINTAIN

By MARTIN A. BARTON

***As Told to* EDGAR PARKER**

Exclusive feature

As a truck operator you probably blame high maintenance costs on your shop whether you are using your own or outside mechanics. Actually your maintenance costs are what you make them. If you have high standards in buying trucks you will have high standards and low costs in maintaining them. You can be your own doctor and money saver by setting up standards or specifications for *your own needs* and then insisting on those standards and specifications in buying trucks and bodies.

You naturally blame high maintenance costs on your shop, whether your own or outside mechanics. But if you are using trucks, bodies or accessories that are allergic to costly ailments you can be your own doctor and money saver by setting up standards or specifications *for your needs* and then insisting upon them in buying trucks and bodies.

In other words, your maintenance costs are what you make them—if you have high standards in buying trucks you will have high standards and low costs in maintaining them.

I am convinced of this by 35 years of maintenance for manufacturers, dealers, and fleet operators. Mine is not a desk job—rather I am working supervisor of maintenance for a fleet of 50 trucks in the heavily congested New York City traffic, serving delicatessen shops, restaurants, and luncheonettes in Manhattan, the Bronx, parts of Brooklyn and towns on Long Island.

Our fleet is comprised of three groups—some 15 year old trucks with 200,000 miles to their credit and still operating with the original bodies; a group of ten-year old trucks already sporting their second bodies; two makes of post-war one-ton trucks, each with a different make of oversize, higher body. In this article, my comparisons will be of one-ton, post-war chassis only, but in the case of bodies, I shall draw certain conclusions from the fact that the 15-year-old bodies do not show the same corrosion costs as some of the later units and that there is a difference in the newer or post-war bodies due to difference in metal quality, thickness, characteristics, etc.

Both kingpins are from one ton trucks. The oversize kingpins (right) last more than twice as long and save more than $100 a truck in maintenance.

In my experience, certain obvious facts stand out and I shall support them with detail and costs.

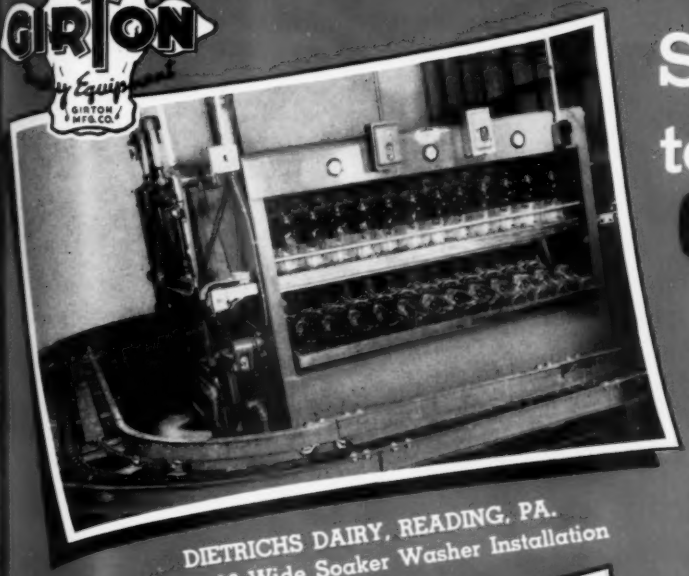
1. Frequent-stop deliveries in very congested traffic require *sturdier trucks and bodies* than normal truck usage.

2. One make of truck costs less to maintain than another. Oversized kingpins last much longer and cost much less for parts and labor, ditto for oversized clutches and brakes. Some engines cost less than others to maintain due to better design, lubrication, cooling, etc. Some spring designs cost less than others during a truck's lifetime. Some bodies corrode faster than others and some bodies don't rust at all.

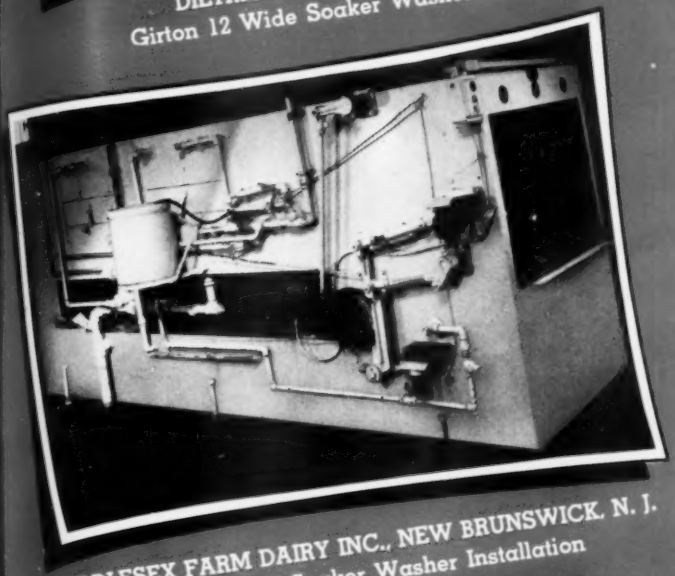
3. Analysis of the specifications and construction of trucks and bodies before purchase is the first step toward delivery economy and warrants setting up your own minimum standards or specifications *for your routes and conditions.*

Kingpins, for instance: Some of our post-war trucks have 1⅛-inch and some have 1-inch kingpins. In frequent-stop service the light kingpins have to be replaced about every 20,000 miles at a cost of $21.50 per set for parts and labor or nearly $200 during a truck's 200,000-mile life. The heavy kingpins last more than 50,000 miles without showing appreciable wear and cost $22.50 per set for parts and labor or less than $70 for 200,000 miles. The difference between the two types of kingpins at the time of a truck's manufacture is trifling – less than $1.00 per set. The few cents saved on a small kingpin can cost

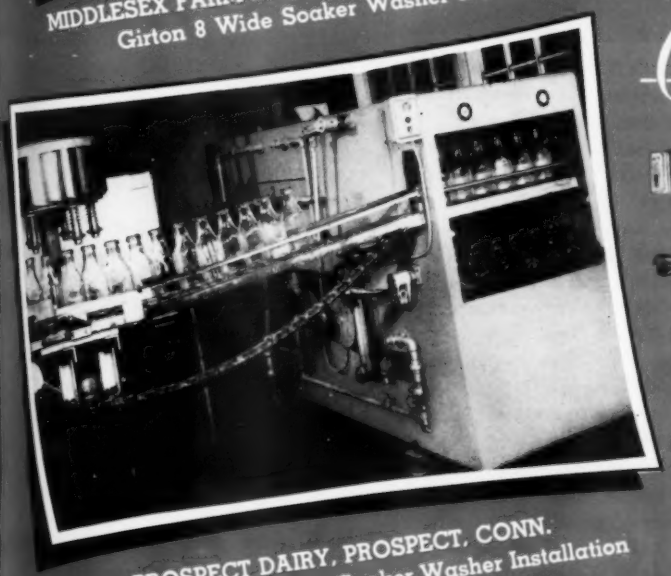
GIRTON Dairy Equipment
GIRTON MFG. CO.



DIETRICHS DAIRY, READING, PA.
Girton 12 Wide Soaker Washer Installation



MIDDLESEX FARM DAIRY INC., NEW BRUNSWICK, N. J.
Girton 8 Wide Soaker Washer Installation



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Girton 6 Wide S A Model Soaker Washer Installation

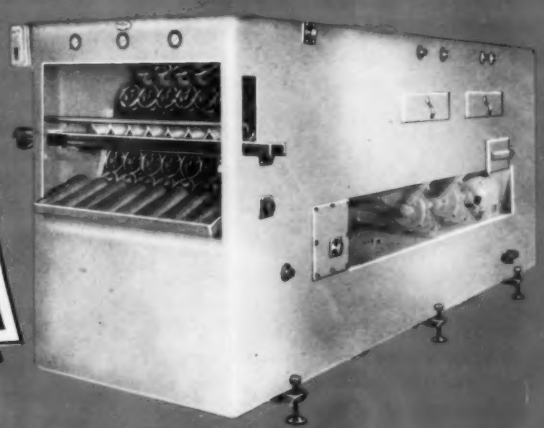
Satisfied Users tell the story of GIRTON SOAKER WASHERS!

Hundreds of satisfied users are the biggest boosters of Girton Soaker Washers. Large plants, medium size plants, small plants . . . each has found the specific washer that best suits its particular needs.

Do you have a problem of limited space? Are you interested in operating economy and low labor costs? Do you have a problem of bottle size or shape? Ask Girton for the modern up-to-date answer. There's a Girton Soaker to wash every size—every shape. Capacities from 960 to 7560 bottles per hour.

WRITE FOR BULLETIN

GIRTON MANUFACTURING COMPANY
MILLVILLE, PA.



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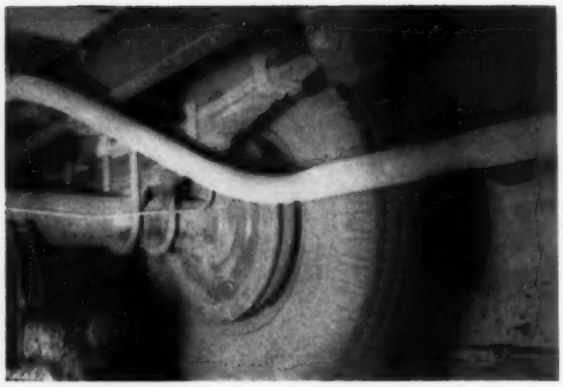

The eye-type rear spring (left) has limited give. That give is not enough when a truck hits a rut or other obstruction. Broken springs are the result.

The free floating rear spring (right) has unlimited give and practically eliminates rear spring breakage. Spring trouble can amount to $200 per truck.

frequent-stop users more than $100 during a truck's lifetime. Actually it costs users even more because worn kingpins mean extra tire wear and less mileage per tire. It pays to insist on sturdy kinpins for frequent-stop service.

Brakes: Some of our post-war one-ton units have larger braking area—front and rear—than our other 1-ton post-war trucks have. They also are of more effective design and are easier to maintain. Our trucks with greater braking area do twice the mileage before relining, and scored drums are *most unusual*. Labor and materials for the larger linings, 4 wheels, average about $17 or about $100 during 200,000 miles. The skimpy linings average about 15,000 miles before relining and often the drums are scored, necessitating regrinding or replacement. The cost for labor and materials is about $28 for four wheels and as much as $75 if new drums are needed. Assuming a 200,000 mile life of these trucks, that means $300 a truck and even more when new drums are needed. Bear in mind, in this connection, that we operate in heavily congested traffic and many sudden stops are necessary.

Expressed differently, the parts costs per relining, are about the same (exclusive of drums) but the brakes with larger braking area require about *2 hours less labor*, due to their design, easier accessibility and easier adjustability. Both shoes are equal in size and importance. They operate with a soft pedal and are center locking or self-energizing. Both shoes wear evenly.

The skimpy brakes have a primary shoe and a secondary shoe. Experience shows that the primary shoe does most of the work. With less total lining surface and one shoe carrying most of the burden, the linings wear out sooner. Hard pedalling is natural and scored drums result—at least that is the case in frequent-stop service in heavily congested traffic.

By specifying greater braking area in buying trucks, a saving of more than $200 per truck is possible.

Clutches: One-ton truck specifications show that some have larger clutches than others. We have to replace the smaller clutches in 20,000 to 30,000 miles. This costs about $23 for parts and labor or about $175 during a truck's life of 200,000 miles. Oversize clutches do 60,000 miles and more before replacing, saving about $100 per truck during it's life.

Editor's Note: Mr. Barton has had 35 years' experience in automotive maintenance, including service with truck manufacturers, truck dealers and fleet operators. At present he supervises a fleet of about 50 trucks delivering light, bulky loads in heavily congested traffic areas. Mr. Barton's experience has made him a keen analyst of truck and body construction. He knows the causes of failures and the difference in costs of servicing various makes of trucks. Some of the improvements he has made in trucks and bodies to reduce maintenance costs have since been adopted by manufacturers.

Springs: It is easy to blame spring breakage on ruts and cowboy driving, but the design is often the real cause of the trouble. Some rear springs have an eye at each end, through which the bracket bolt passes. When the truck is loaded, the spring naturally flattens and stretches. The rear shackle has a limited amount of give. When a loaded truck hits a rut or other obstruction, that give of the shackle is not enough, and broken springs result. In a severe strain, both rear springs go. Parts and labor run to about $50 for the repair or to as much as $200 during a truck's life. This type sometimes suffers a broken spring a month per truck and requires replacing of shackle bolts every 10,000 miles. We had special rear bracket bolts made up that are longer and have a special provision for lubrication. The extra length permits use of two or three shackle plates on each side instead of the one plate furnished as standard. These special bolts have reduced spring failure frequency with the type of spring described. But our other post-war, one-ton trucks have a better rear spring construction, the rear end of the spring is free floating. This affords unlimited give or stretch. These free floating rear springs practically eliminate rear spring breakage and the rear end damage experienced with limited stretch springs. The savings in parts and labor are obvious.

Rear Ends and Transmission: Besides rear end trouble caused by restricted spring stretch resulting in spring breakage and damage to rear ends, some post-war, one-ton trucks have light transmission gears and light rear ends. There is only one way to

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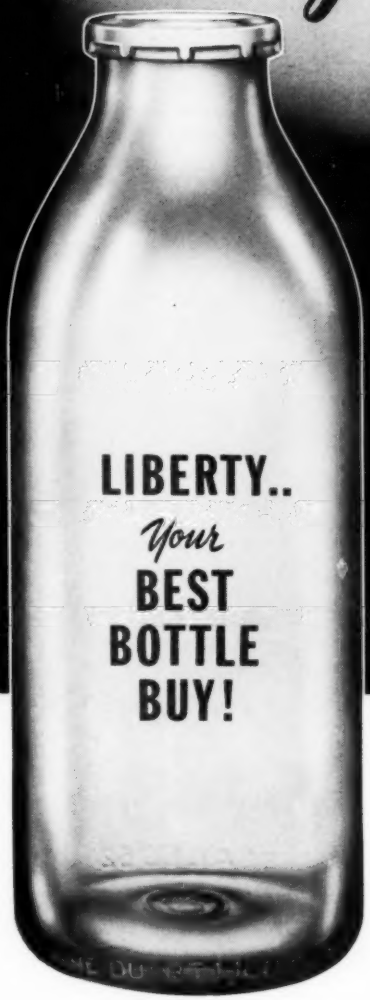
You have Nothing to HIDE



USE *Liberty*
RETURNABLE GLASS BOTTLES
FLAME-POLISH
with LUSTRO-COLOR

Don't masquerade your product. Show its quality to the greatest advantage in Liberty's attractive FLAME-POLISH Glass Bottles. At store or home, customers can see at a glance both quantity and quality of your product.

Because they're designed and built to withstand rough handling, heat shock and high temperature sterilization, Liberty's FLAME-POLISH Returnable Glass Bottles are good for 40-50-60 trips. And every time a bottle returns, it means extra profits in your pocket.

SPECIALIZING IN *Returnable* GLASS CONTAINERS
SINCE 1918

THE DISPLAY CONTAINER WITH BETTER RETURNS

Liberty Glass Company

SAPULPA, OKLAHOMA

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avoid the resultant maintenance expense—namely, in buying trucks, check carefully on transmission and rear ends to make sure of sturdier units to handle the torque required. The savings will greatly exceed the extra first cost. It is axiomatic that frequent-stop deliveries in congested traffic need sturdier transmissions and rear ends than one-ton trucks for ordinary conditions. To illustrate, I cite the following: In both post-war, one-ton trucks we operate, the transmission shaft is the same size and apparently the same make. They are interchangeable. In the sturdier transmission the sliding gear used in 1st and reverse weighs more than twice as much and has a leverage of 2¼ inches (thickness through shaft opening) compared with 1⅝ inches of the skimpy gear. Basically, the two gears are the same in diameter, teeth and quality, but the sturdier gear has a balance or shoulder on one side that gives it greater weight, leverage and efficiency.

Rear ends likewise, are different in sturdiness or the lack of it. Parts books may help with their specifications and illustrations, but if you make it a point to inspect the transmission and differential parts before buying, you'll have smaller maintenance bills to okay later.

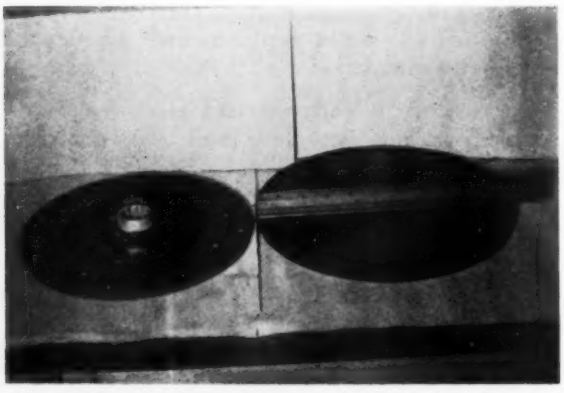
An executive may not feel up to judging these details in buying trucks but every fleet operator has a mechanic who can tell the difference and should be able to explain the dollars and cents difference.

Tires: Assuming first grade, good brand tires and assuming proper inflation and attention to cuts and bruises, you can still have high tire costs and low tire mileage due to:

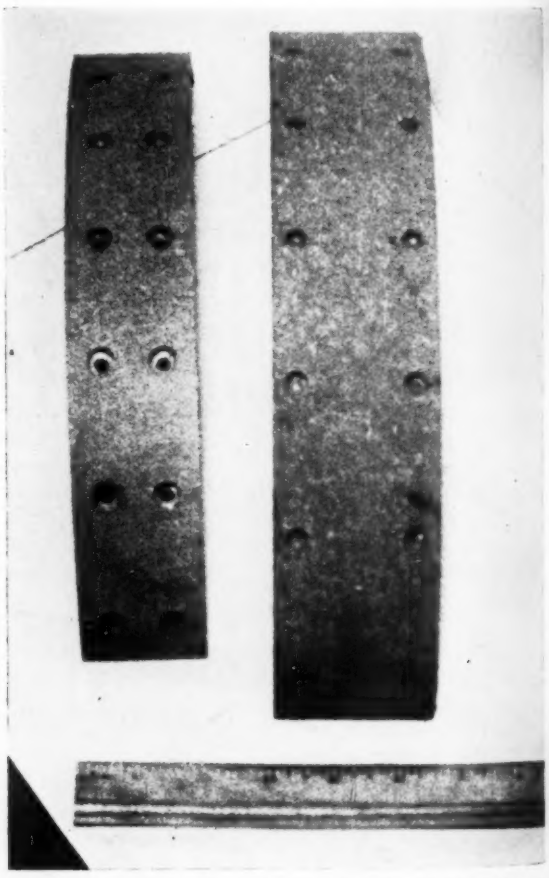
1. loose, worn, under-sized kingpins
2. faulty springs and spring shackle construction
3. wrong type shock absorbers
4. inadequate brakes
5. under carriage failures
6. disc wheels that make inflation difficult with rubber stem tube valves.

To illustrate—in frequent-stop service, one make of post-war truck in our fleet averages 23,000 miles before recapping tires, whereas another make of post-war truck in the same type of route and the same conditions of traffic, stop-frequency, payloads, etc., is consistently doing 30,000 to 35,000 miles before recapping. Tires have done 45,000 miles before recapping on our trucks whose standard equipment includes larger kingpins, over-sized brakes, more efficient shock absorbers, better spring mountings, etc. Nearly 50% more miles per set of tires speaks for itself in dollars and cents.

Engine Efficiency: With one design of engine, valves have burned out every 18,000 miles. In another engine the valves last indefinitely, relatively speaking, resulting in less maintenance and better mileage per gallon. Often low mileage per plug, valve, quart of oil (also per gallon of gasoline) is due to the engine running hotter in spots and this in turn often results from insufficient lubrication, faulty cooling, etc. It is easy to assume that a given size of orifice will permit the desired circulation of lubricant, gasoline, water, etc., but maintenance and failure inspections show that in practical operation, with changing oil and temperature conditions, the orifices should be larger. To illustrate: The engine cooling system is designed to bring adequate cooling to each cylinder. Some water pumps are at the front, others



One ton trucks with oversize clutch (right) give better service and operate at about $100 less per truck than do similar vehicles with smaller clutches.

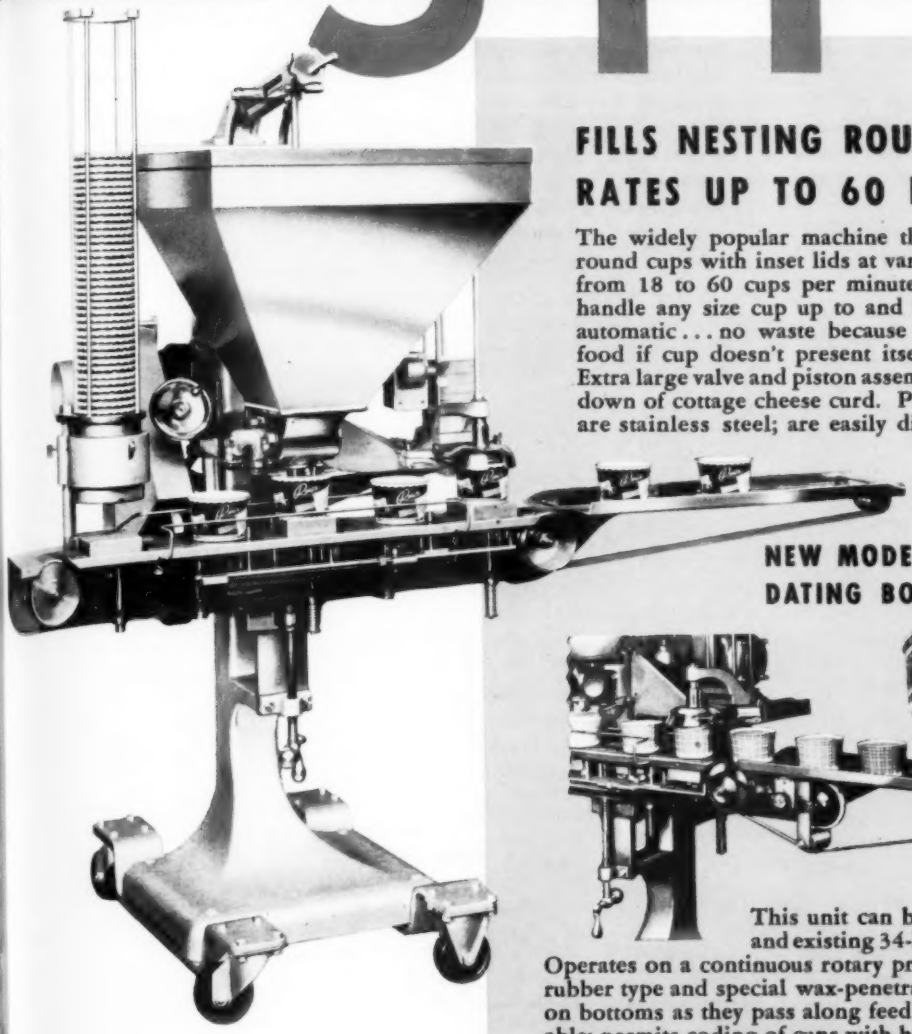


Some one ton trucks have a bigger braking area than others. The oversize brakes (right) save more than $200 a truck in maintenance because they last much longer.

ONE OF THE MOST POPULAR NUMBERS IN THE INDUSTRY

34-F

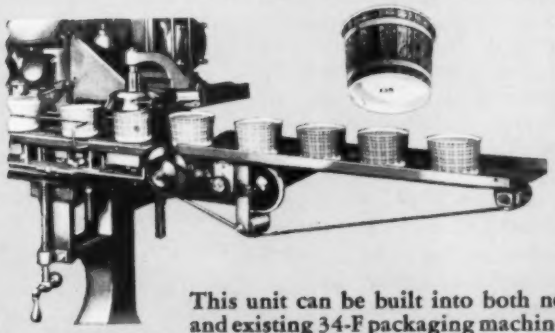
Anderson AUTOMATIC UNIVERSAL FILLER & CAPPER



FILLS NESTING ROUND CUPS AT RATES UP TO 60 PER MINUTE

The widely popular machine that packages nesting round cups with inset lids at variable speeds ranging from 18 to 60 cups per minute. Easily adjusted to handle any size cup up to and including pints. All automatic . . . no waste because it will not dispense food if cup doesn't present itself at hopper station. Extra large valve and piston assembly eliminates breakdown of cottage cheese curd. Parts that contact food are stainless steel; are easily disassembled for thorough cleaning. Step up production...step up profits with the 34-F.

NEW MODEL 38 CODER FOR DATING BOTTOMS OF CUPS



This unit can be built into both new and existing 34-F packaging machines. Operates on a continuous rotary printing principle using rubber type and special wax-penetrating ink. Marks cups on bottoms as they pass along feed line. Coder is adjustable; permits coding of cups with bases of varying height.

Coder is easy to install . . . simple in operation. An invaluable accessory from *your* standpoint as well as that of your customers.

The MODEL 34-F handles: cottage cheese, sour cream, potato salad, cooked beans, squash, chicken or ham salad, chop suey, honey and many other food products.

ROCKFORD
Anderson
BROS. MFG. CO.
ILLINOIS

Use this Handy Coupon for Quick Information

ANDERSON BROS. MFG. CO., ROCKFORD, ILLINOIS

Please Send Bulletin No. 7-38.

Name .....

Address .....

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feed into the cooling system at the middle. In either case the nearest cylinders to the pump have smaller orifices passageways and less cooling than the more distant cylinders.

On paper and on the block test, the cooling provisions may be adequate, although it is obvious that the front end pump has more obstacles to overcome than the water pump located at the middle of the block. But in practical operation, a certain amount of rust from the radiator enters the cooling passages, ingredients in the water also accumulate, even minute particles of hose may get into the water flow. These foreign substances adhere to the sides of the passageways especially at the cylinder head gaskets. To satisfy yourself, just look at the water passage ways and the head gasket openings the next time an engine is taken down. These foreign substances decrease the size of the orifices or passageways and, in effect, insulate the cylinders against the cooling water, therefore, the engine develops hot spots and some valves burn and crack while others do not.

To satisfy myself I took an engine that was burning and cracking valves about every 18,000 miles. I made changes to eliminate the cause. I've just removed the cylinder head after 54,000 miles and not a single valve is burned or cracked. I did not change the pump location. I used the same make of valves. I have made similar modifications to ensure better lubrication and to improve gasoline flow. But I naturally ask myself, since other postwar trucks don't require this extra work and expense why shouldn't all truck manufacturers help users save money by designing units that will function as well in actual use as they do in factory tests? Meanwhile in buying new trucks, it still pays to check up on oil and grease and water passages, carburetor percolator holes and timing chain lubrication.

Body Costs: Since some of our bodies have stood up for fifteen years in hard service, whereas other bodies in our fleet have had to be replaced after five or six years of service, it follows that pre-purchase analysis of body materials and construction are important in the struggle to cut delivery costs. Both truck users and body shops tell of body reconditioning jobs than ran to $500 and $600 during and since the war. The first cause is body metal.

MILK — Six Cents A Quart

A brief neighborhood price war in Brooklyn brought milk down to six cents a quart last month. The fracas was strictly a storekeeper affair and was confined to a few blocks but it was hot and heavy while it lasted. The battle started when one merchant cut the price a cent. From that point the boys took off on a race to the bottom. After two or three days common sense prevailed and peace came as prices went back to normal.

Sometimes it is too light and is often too brittle. This is bad in ordinary strains and stresses, especially at the body mounting points and is very bad in case of severe bumps, accidents, etc. Brittle metal lacks resiliency. It fails to bounce back or to tap back easily and also cracks easily. It is discernible in body maintenance that some body metal rusts sooner and more than other body metal. The difference is in the weight and quality of the metal. But there is the added cause of faulty construction. During the war, it was evident on every well traveled street, that truck bodies were suffering from corrosion starting in out-of-sight places. Tracing this corrosion usually showed:

1. Failure of the manufacturer to prevent moisture access
2. Mouldings and rub rails open at the ends or accessible otherwise to water seepage, dust, salt, grit
3. Resting places for moisture and dirt between body panels and mounting channels with resultant seepage
4. Cross ribs with open ends under the body floor permitting moisture to enter the rib and rust it through
5. Undercoating has been stressed for both bodies and chassis.

HEY JACK, YA GOT YER LINES CROSSED. THE HORSE TROUGH IS FULL OF MILK.

It is a good thing, but it is not the complete answer. If you undercoat or buy undercoating, remember that it takes ⅛" of thickness to afford real protection. Secondly, if you undercoat metal that is too light, too soft, or too brittle, you can expect cracks or holes at dents and once rust gets a foothold at these spots, you're in for trouble. Also remember that undercoating may not seal spaces between the outer panelling and the mounting channels and will not seal open cross ribs, applied moldings, open rub rails, etc. It is very important in undercoating to completely seal the body mounting points, lest the supports or the bolts rust through.

These and other conditions indicate why some bodies cost too much to maintain. Thicker body metal is essential to withstand corrosion, strains, stresses, etc. Alloys that combine light weight, resiliency and are rust proof will cost more to buy, but much less to maintain. It is probable that the end of present restrictions will see a decided swing to better body construction, with rust-proof metals in the lead. Another desirable feature for economy in oversized, higher bodies is *divided* side panels, so that the lower half (where damage usually occurs) can be replaced without replacing the upper half where costly lettering and decals are located.

Hardware—Door handles and hinges repay close scrutiny in buying. Replacements cost too much and, therefore, sturdy handles and hinges belong in your specifications and will be there if you realize that some suppliers now realize it, too.

A good mechanic can keep a good truck good economically. But he can only keep poorly selected equipment running by spending far more for improvements and repairs than is necessary. The possible savings that can result from wise selection of delivery equipment are sufficiently great to make the effort worthwhile.

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quality conscious, economy minded plant operators are converting to...

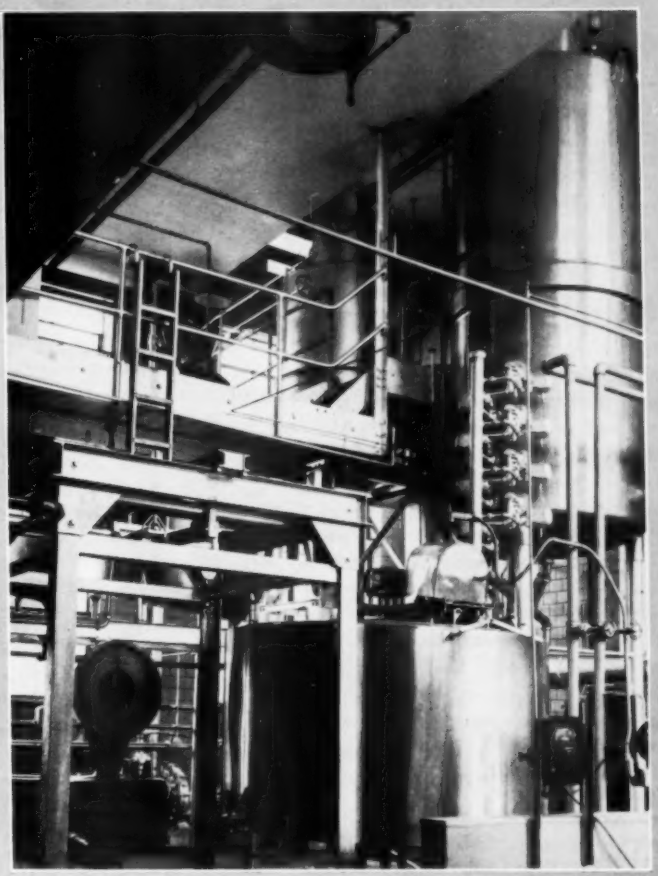
Buflovak

DOUBLE EFFECT OPERATION

The reason: Greater Profits.

Whether you convert your present coil pan or install a completely new BUFLOVAK Double Effect Evaporator, you get BETTER condensed and evaporated milk at HALF THE COST. BETTER PRODUCTS because milk is scientifically processed at safe, low temperatures, automatically controlled. Natural flavor and color of milk is preserved because evaporation is instantaneous. HALF THE COST because in a BUFLOVAK Double Effect Evaporator equipped with a BUFLOVAK Vapor Heater*, steam literally does double duty . . . cooling water requirements are proportionately lessened. Another cost-cutting, profit-building factor is the high solids recovery. In BUFLOVAK's Tangential method of vapor handling, there are no boiling over losses. Stainless steel throughout. All heating surfaces can be cleaned without entering evaporator.

*There's a tremendous profit-making saving of 67% less fuel and 80% less water with Triple Effect Evaporators equipped with Vapor Preheaters, as compared to single effect.



BUFLOVAK Evaporator added to coil pan for increased capacity, improved product and double effect economy.

Buflovak

MILK PREHEATER

(Steam Type)

Speeds production, cuts costs. Quickly closed for operation; easily opened for thorough cleaning. No parts to disassemble; no gaskets to replace. Completely sanitary.

Write for Bulletin 343

BUFLOVAK EQUIPMENT DIVISION

OF BLAW-KNOX COMPANY

1627 Fillmore Avenue Buffalo 11, N. Y.

INDUSTRY PROBLEMS

Dr. Robert F. Holland and Dr. James C. White, both of the Department of Dairy Industry at Cornell University, conduct their question and answer column each month in the "Review." Questions should be addressed to either Dr. White or Dr. Holland, Department of Dairy Industry, Stocking Hall, Cornell University, Ithaca, N. Y.

●

Enzylac and Oxidized Flavors in Milk

Question—During the past late winter and early spring months we have had a great deal of trouble with oxidized flavors in our pasteurized milk. Although we are small operators, our equipment is stainless steel throughout and we try to put out the best product possible. We have heard that there is a material that can be added to milk that will prevent the development of this flavor. Can you give us any information about it, how it is used, and where it may be obtained?

J. C. B., Ohio.

ANSWER—Before discussing the possibility of adding materials to milk for the prevention of oxidized flavors, I would warn you that the laws in some states prohibit the addition of any foreign materials to milk and any such additions would constitute adulteration, and the offender would be subject to prosecution. At least two harmless materials, and probably many more, might be added to milk to assist in the prevention of the off flavors that you mention. One of these is vitamin C, or ascorbic acid, which is a natural constituent of milk as it comes from the cow. During handling and processing vitamin C tends to be destroyed and when it reaches a low level, oxidized flavors develop rapidly. It is claimed that the addition of pure vitamin C at the time of pasteurization will prevent flavor deterioration. Varying amounts are recommended, but the usual range is between 10 and 25 milligrams per quart. This would be the equivalent of one gram to 40 quarts, or approximately an ounce to 1200 quarts of milk, calculated on the basis of 25 milligrams additional per quart.

The action of vitamin C in the prevention of oxidized flavors is not completely understood and opinions differ widely as to the successfulness of this treatment. Pure vitamin C may be purchased from any good chemical supply house.

Another preparation that has been used with good success is called enzylac, and is distributed by the Enzylac Division of the American Seal-Kap Corporation, 11-05 44th Drive, Long Island City 1, New York. Enzylac is a pancreatic enzyme powder and its activity is destroyed by pasteurization. The material is harmless and our experiments have indicated that it is very effective. Only small amounts are needed and the usual recommendation is one part in 40,000 parts of milk, or one ounce to 280 gallons. This quantity may be reduced as experience shows lesser amounts to be effective.

If milk is processed by the vat pasteurization method, the enzylac should be added by first placing it in a quart bottle that has been half filled with cold raw milk. The mixture should be shaken thoroughly to make certain that the powder is well distributed, and then it should be added to the vat of milk before heating begins. Pasteurization is carried on in the usual manner.

In the case of high-temperature, short-time pasteurization the enzyme should be added to the storage tank at least 15 minutes before processing begins. At least half of the milk to be processed should be in the tank at the time of the addition of the powder. The remainder of the milk should be run into the storage tank as soon as possible after this so that enough of the enzyme material may be present for effective action.

The addition of the above materials for milk supplies is fairly expensive, but, if they prevent the loss of customers and promote the consumption of milk, they are undoubtedly worth while, providing again the practice is not specifically prohibited by state law.

Washing and Neutralizing Butter

Question—What is the approved method for neutralizing cream for buttermaking? How many times should butter be washed in the churn?

R. H., Ohio.

ANSWER—Neutralization of cream to reduce the percentage of acid is accomplished by adding alkali which will react with the acid to form a salt. It is desirable to neutralize only a part of the acid and it is usually done before pasteurization.

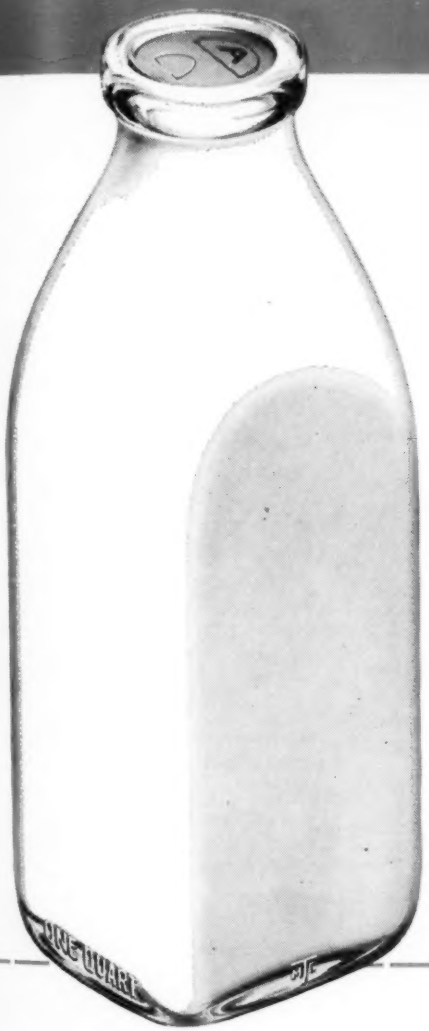
There are two common types of neutralizers, soda and lime, and both are sold under various names. The strength of the various neutralizers is given in the directions from the manufacturers.

It is important that the operator know accurately the amount of cream in the vat and the percentage of acid

(Please turn to Page 67)

Single-Trip Container or Returnable Bottle

WHICH COSTS LESS?



Returnable glass bottles cost less to use, report Thatcher T-Square dealers! Here are the facts to prove it.

The single-trip container only makes one trip, therefore, its cost per trip is fixed. The returnable glass milk bottle, on the other hand, averages 39 round trips.* Thus, while the milk bottle's initial cost is somewhat higher, its final cost is low — just a fraction of a cent per trip!

All this adds up to just one thing; it pays to use Thatcher Milk Bottles. Thatcher Glass Bottles are especially designed to help hold your container costs down. Their rugged construction — a product of 65 years' bottle-making — withstands washing, filling and handling better. Result: Thatcher Milk Bottles save you money by making so many round trips.

Get the full facts on returnable glass milk bottles from your nearest Thatcher representative — contact him today! Or write, wire or phone Thatcher Glass direct.

**U. S. Department of Agriculture Report*

Bottle-maker *for the* **Dairy Industry**

THATCHER GLASS

MANUFACTURING COMPANY, INC.

Factories: Elmira, N.Y., Streator, Ill., Lawrenceburg, Ind.

Sales Offices: BOSTON, NEW YORK, BUFFALO, PHILADELPHIA, CHICAGO, ROCHESTER, N.Y., CINCINNATI, ST. LOUIS, DETROIT, ST. PAUL, LOUISVILLE, WASHINGTON, D.C.

SELECTING VENDING EQUIPMENT

By P. E. RAMSTAD and R. F. HOLLAND
School of Nutrition and Department of Dairy Industry
Cornell University

SELLING MILK through vending machines in factories, offices, schools, and other locations offers a means of increasing milk sales and profits. Success in such a venture is dependent upon several factors. Of these, choosing the right vending equipment, obtaining high volume locations and maintaining customer goodwill through efficient, reliable service are the most important.

The role played by equipment in determining the success of a milk vending operation is evident from several factors. The vending machine is the medium of contact between operator and customer. It can build good will or ill will. Sales volume may often depend on the speed of operation and the attractiveness of the vending equipment. The cost per machine determines how many locations can be served with a given capital investment. The type of equipment will dictate, to a large degree, the cost of servicing and maintaining it. In other words, the sales cost per unit of milk sold may vary with the type of machine used.

This article will discuss the criteria which should form the basis for intelligent selection of the best vending machines for the job. Considerable capital expenditure is involved in the purchase of such equipment, and this factor alone makes careful selection mandatory. The cost of owning and operating a milk vending machine is not easily determined. The initial cost is an investment which must be amortized over a period of several years. Whether a machine will become obsolete before the end of the amortization period or whether it will function profitably far beyond this time is not easy to predict. In any event, during the lifetime of a vending machine labor costs equal to several times the original cost of the equipment may be expended in servicing, maintaining and cleaning it. Because of the close relationship between the sanitary quality of milk and public health, milk vending machines generally are closely scrutinized by health department officials. A prospective purchaser of such equipment should not only examine carefully the sanitary features of the machines he is considering, but also get the opinion of representatives of his local department of health.

HERE WE GO AGAIN

Britains, just smacking their lips over real, honest-to-goodness cream, after a ten year stint without it, were cut right down to size when the government announced that there will be no more cream after the first week in July. Further gloom was in order when it was declared that milk may have to be rationed. Cream was finding a ready market at ten shillings a pint ($1.40) so hungry were the people for the product.

Vending machine manufacturers and buyers should be familiar with the general requirements of the 3A standards for construction of dairy equipment so that health department requirements may be met. These considerations are also important from the standpoint of saving labor in cleaning the machines.

Most milk vending machines are designed to dispense packaged milk. They may be adapted to handle any of a variety of sizes and shapes of paper or glass containers. A few machines have been designed to dispense open cups filled from a ten gallon milk can or other bulk container within the machine. The latter type of machine poses special problems particularly from the standpoints of cleanliness, sanitation, and speed of operation. It is difficult to keep them dust-free, and to avoid splash on filling cups and spillage of filled cups by careless customers. They cannot be easily loaded with varying quantities of milk in accordance with fluctuating demand. Many health departments have ordinances which, if strictly adhered to, preclude the use of bulk vendors for milk. In general, where now in use, they have been permitted on an experimental basis.

Machines Are Manual or Automatic

Package vending machines may be classified as either manual or automatic. Manual equipment requires some act by the consumer after he

Records in Leading Cities Prove

GAULIN

HOMOGENIZERS

are the Choice of Dairies by a Big Margin

Minneapolis 75% of the homogenizers are Gaulin . . . Portland, Oregon 3 out of 4 dairies use Gaulin homogenizers . . . Charleston, S. C. over 90% of the homogenizers are Gaulin . . . Denver over 90% of the homogenized milk is processed with Gaulin — so it goes, in city after city, town after town Gaulin Homogenizers are preferred and used by a large margin.

The reason . . . Gaulin Homogenizers meet the need of fast, economical homogenization. They assure the same uniform quality and flavor day in and day out. Rugged, dependable, precision built, they give long life with little if any maintenance. They are sanitary, easy to keep clean.

Small or large producer, there's a Gaulin Homogenizer to meet your specific gallonage requirements. See your jobber or write for information.

MANTON GAULIN
Manufacturing Company, Inc.
49 GARDEN STREET, EVERETT 49, MASS.

has placed a coin in the machine in order to obtain the product. Automatic machines, on the other hand, require no effort on the part of the customer, after he has inserted his coin, electric motors do the rest.

Manual vendors possess the advantage of low first cost (from $200 to $500 depending upon make and size) and mechanical simplicity which makes for a minimum of mechanical maintenance. Their chief drawback is the relatively slow rate at which most of them are able to serve customers. In some locations this is not too important. In others, where there are likely to be short periods of peak demand during the day, the slow operation of this type of equipment may lose sales. Workers with a short lunch period may skip milk rather than spend half their alloted lunch time waiting their turn to buy.

Automatic machines cost approximately twice as much as manual machines of similar capacity. The operator can justify this added cost only if automatics sell appreciably more milk. In many locations they do accomplish this both as a consequence of their greater "customer appeal" and, even more important, their greater vending speed—the ability to serve five or more times as many customers per minute during periods of peak demand, as during a rest period, a lunch hour, or between classes.

Some vending machines are available in several sizes offering a range of capacities. What is the best size to purchase? Experience has indicated the desirability of supplying a vending machine with fresh milk each day. Despite the fact that properly handled and refrigerated milk may remain palatable for several days, the public prefers to purchase milk the day it is delivered. On the other hand, delivering milk to a machine several times a day to keep up with demand increases servicing costs. The optimum size has a capacity slightly in excess of the maximum sales volume likely to be realized in a single day. When such a size is not available a decision must be reached on whether to service a machine several times a day or to place two or more machines in the location.

Since vending machines usually must be placed on some one else's property and there often may be severe limitations upon the amount of space available, all other things being equal, a machine which occupies a minimum of floor space is to be desired.

An automatic vending machine represents a substantial investment. They come in a variety of sizes and cost about twice as much as their manually operated counterparts. The machine shown here is a good example of the automatic type of vending machine.

All vending machines are mechanical devices which can be expected to require some maintenance and adjustment. The amount of such attention may vary to such an extent that it may be either an insignificant or a very sizable proportion of the cost of machine operation. In general, the simpler the design, the less there is to go wrong and demand attention. On the other hand, certain features which might appear quite simple may involve rather delicate adjustment which is not easily maintained. The actual experience of operators who have used various makes of machines may be the best criteria in this regard. Good design requires that the interior and all working parts be easily accessible. Parts should be interchangeable and replacement simple. Under good operating practice a vending machine should be reloaded before it is completely sold out. In some designs, the method of loading automatically insures that the old milk is sold before the new. In others this is not the case. A conscientious delivery man may move the old milk to a position where it will be sold first. The time spent in this operation costs money, but if it is not done some customer may receive an unpalatable, or even sour, product. His and his friends' patronage is likely to be lost.

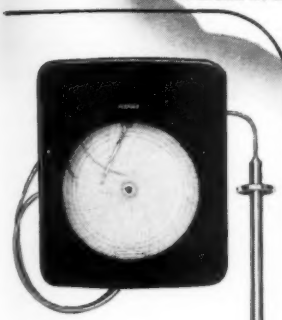
Must Be Cleaned Frequently

Vending machines require cleaning at frequent intervals. Cartons may leak; paraffin and dirt are certain to be rubbed off containers; spilled milk may become sour even though refrigerated. Accordingly, sanitary practice requires that the interior as well as the exterior of milk vending machines be cleaned at frequent and regular intervals, using such necessary cleaning aids as hot water, detergents and brushes. The time required for and, hence, the cost of cleaning is largely dependent on design of the machine and is deserving of special, careful consideration when purchasing equipment.

Milk vending machines are available which will handle anywhere from one to eight different products simultaneously. Some machines must sell all of these at the same price but in others products may be sold at different prices. Such items as plain whole milk, chocolate-, coffee-, straw-

SERVICE

"ON THE DOT"



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INSTRUMENTS THAT IMPROVE Product Uniformity

berry-, banana-flavored milk, buttermilk, fruit juices, etc. may all be sold through the same machine. It is claimed by some equipment manufacturers that the more products offered the greater will be the total sales volume. This may often be true. On the other hand, there is an added complication offered in supplying too many items of limited popularity. Products of one flavor are likely to remain unsold and these must be removed from a machine which could have sold more of another product had the supply of the latter not been exhausted. Then, too, the time required by some persons to make up their minds when confronted with too many choices may prevent others from patronizing the machine. The result may be a net loss in sales volume.

Because of its highly perishable nature milk must be kept under refrigeration at all times. The lower the temperature of storage, the greater will be the flavor stability. However, many persons find that milk cooled nearly to freezing is too cold to be palatable. Hence, a temperature of 38-40°F. is desired by most vending machine operators. Uniformity of temperature throughout the cabinet is of course desirable and is accomplished in many vending machines by forced circulation of refrigerated air. Good insulation in the cabinet walls not only reduces electric power consumption but extends the life of the equipment by reducing wear on the compressor mechanism and preventing sweating of the cabinet exterior. Most modern milk vending machines are refrigerated by packaged, sealed units which usually give long and trouble-free service.

One of the difficulties which has plagued manufacturers of milk vending equipment is the variety of containers in which milk is sold. Most machines will handle any desired type or size of container if such size and type is specified at the time of ordering. The ease with which equipment can be adapted to other containers varies greatly. In some machines new parts are required if such change is made. Others can be rather easily and quickly altered to handle different containers. The capacity of a machine depends on the shape as well as the size of the containers with which it is loaded. Leakage problems are minimized by an upright container position.

WISCONSIN STILL TOPS

Wisconsin dairymen in 1950 retained their crown as the nation's undisputed leader in the production of milk and dairy products, the annual milk production report of the U. S. Department of Agriculture reveals.

Badger milk producers are given a number of "firsts" in the national dairy report.

They rank first in the production of milk, with a total of 15,612,000,000 pounds—13 percent of the nation's total milk supply. This is an increase of about 64,000,000 pounds over 1949.

They also rank first in the volume of milk sold, over 14½ billion pounds.

These large sales placed Wisconsin ahead of all states in cash returns from milk and milk products, with a total of 460 million dollars for the year. Over 12 percent of the national dairy income in 1950 went to Wisconsin dairymen. The national income from milk and dairy products totals $3,763,000,000. This is 15% less than the record 1948 return.

Badger producers topped the nation in sales of whole milk to dairy plants and dealers as well as in cash returns for milk sold.

Stay Away, Bad Penny

From the standpoints of both customer and operator there are certain advantages in vending machine operation with prices in multiples of five cents. Coin machanisms need not be so complicated and pennies are neither used nor received in change. However, competitive situations often make such pricing impossible. Change makers may be employed to make possible easy adjustment of prices to any level desired. They also permit the customer to operate the machine with any of several coins or combinations of coins. While such devices extend the versatility of a vending machine, they do add to the cost and mechanical complexity, and careful consideration should be given to their desirability before they are employed. All coin-operated vending machines should be equipped with slug rejectors. These ingenious devices rapidly check each coin for its weight, diameter, and magnetic properties before accepting it. Their sensitivity should be adjustable in accordance with operating conditions, that is, if much difficulty with slugs is encountered, the rejector may have to be adjusted to the point where it not only rejects slugs but also legitimate coins which have become worn.

It is probably impossible to make a vending machine that cannot be damaged, but some are more prone to the ravages of vandals. One should note the manner in which the door giving access to the interior is hinged and locked, the location and method of mounting of the coin box, and the ease with which the machine may be moved or tipped.

An attractive appearance regardless of the surroundings in which they are placed not only helps in getting good locations for milk vending machines, but also boosts sales. Equipment which requires that the customer receive special training in order to operate it successfully is not as likely to be heavily patronized as machines that are easily used even by the novice.

Finally, it is desirable to buy vending machines from a manufacturer who has a reputation for dependability in supplying the parts and service which may be required to keep equipment in good operating condition.

In summary, the following questions should be answered before deciding upon vending equipment for milk:

1. Will it meet with health department approval?
2. What is its capacity?
3. Does it vend fast enough?
4. Is it economical to buy, service, clean and maintain?
5. Is it adaptable to various containers?
6. Does it handle the desired number of products?
7. Are coin changers available?
8. Is it ruggedly constructed?
9. Is it attractive in appearance and simple to operate?
10. Will the manufacturer stand behind it?

"PROUD OF ITS OPERATION"

writes one satisfied owner now using in 3 plants the . . .

KENDALL
RETURNLINE CAN WASHER

The Page Dairy Company
TOLEDO 1, OHIO

May 17, 1950

Mr. Harold Kendall
Kendall-Lamar Corp.
Potsdam, New York

Dear Mr. Kendall:

I want to take this opportunity to thank you for the excellent cooperation your Mr. Dorothy gave us in making the installation of our receiving equipment in our Toledo plant.

We started the operation of our receiving room yesterday morning and after two day's operation we want to say we are more than pleased with the results we are achieving. I could go into a great deal of detail as to the various points which please us; however, the one thing which is most outstanding is the fact that where we used to operate with two men we are now operating with one. Not only did we eliminate one man in our operation, but we also speeded up our dumping operation by at least 50% already, and probably when the operator becomes more accustomed to the equipment this efficiency will be every more improved.

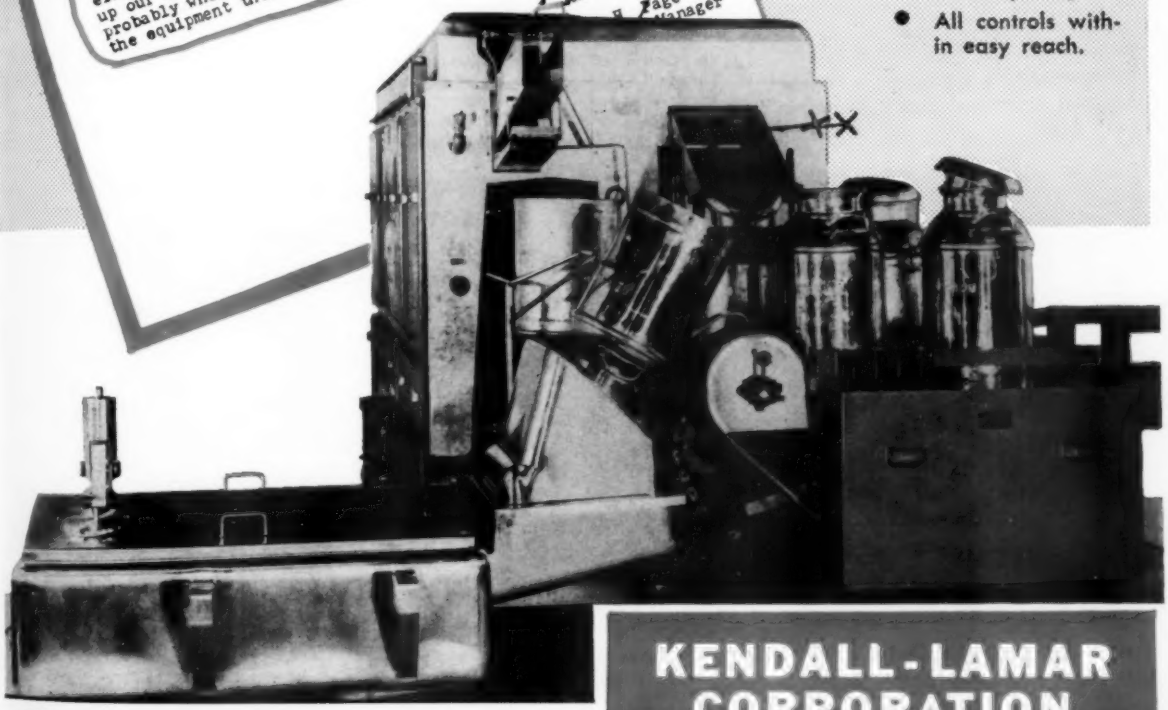
Sincerely yours,

Page
Manager

Featuring THE 150° DUMPING ARRANGEMENT

CHECK *these Features*

- The 150 degree dump provides easier, faster operation providing longer draining time for each can.
- Partition separates cleaning from sterilizing stations.
- Saves costly space and labor.
- Provides maximum visual inspection for incoming AND outgoing cans.
- Eliminates necessity for separate reject conveyor.
- Completely accessible for cleaning and adjusting.
- All controls within easy reach.



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POTSDAM, NEW YORK

XUM

Canned Fresh Milk is Being Produced Commercially on the West Coast

Entire Output of Washington Plant Is Shipped To Over-Seas Markets — Remarkable Operation Results In Product That Will Keep For Months Without Refrigeration

By **DR. ROY R. GRAVES** *and* **JACK MEYER**

WHOLE FRESH milk, aseptically canned so that it will keep for several months without refrigeration, is being produced on a commercial scale in East Stanwood, Washington. Years of research in methods of preserving milk have been combined with a new canning process to accomplish the job. The product does not have the "cooked" flavor considered characteristic of canned milk and once in the cans it does not require any more care in handling than any other canned product.

The Med-O-Milk plant uses equipment and processes developed by International Milk Processors, Inc. and operates under a license from that firm.

These techniques begin with special milking parlors on the farms of all producers supplying Med-O-Milk, and are designed to prevent loss of flavor before, during, or after the sterilizing and canning process. The milk, kept free from exposure to air during processing, is canned by the Martin Aseptic canning process, and is in the can ready for shipment within a few hours (in some cases within a few minutes) after leaving the cow.

Med-O-Milk's entire production, 2,000 gallons of milk per day (soon to be doubled), is being shipped to overseas markets where milk is now high-priced and often unobtainable. Present markets include Alaska and Japan, with the demand still far in excess of the available supply.

The International process is available for licensing to qualified groups.

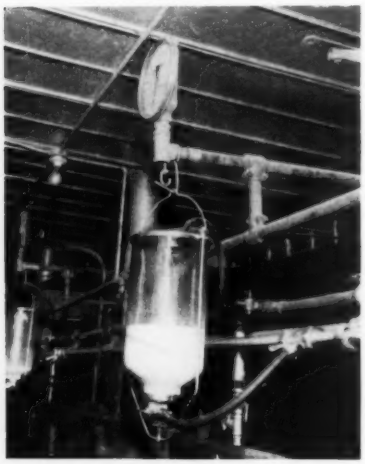
New Milking Methods

New milking methods, which are a part of the process, make it possible for a producer to milk twice as many cows without extra labor. More important, these methods have been developed by Dr. Graves after considerable research and experimentation to prevent the development of "off flavors" in milk. Graves believes that a major share of the credit for the high quality of Med-O-Milk's product is due to milking according to the procedures he has devised.

All milk is purchased within a radius of about 35 miles, and all producers use a special milking parlor designed by International Milk Processors. This differs from conventional milking parlors in that the milk is weighed, checked for color, and stored in a vacuumized tank without ever coming in contact with air. With the special clean-up procedure used for the milk equipment, the time required for the entire milking operation is greatly reduced.

Milk is stored on the farm in a spe-

Dr. Graves is associated with International Milk Processors, Inc. of Chicago. Mr. Mayer is associated with the Minneapolis-Honeywell Regulator Co., Philadelphia, Pa.



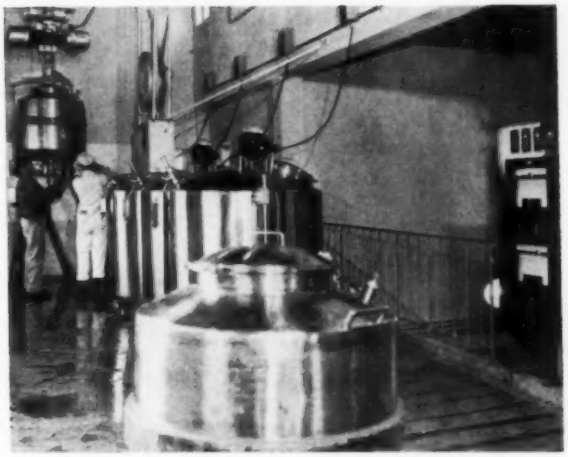
Rigid sanitary precautions begin on the farm where the milk is drawn from cows directly into these glass jars. After inspection and weighing, milker turns special valve allowing milk to be drawn directly into farm tank through sanitary pipeline at lower right.

The finished product. Maureen Rygg, niece of plant manager, holds can of Med-O-Milk which may soon be in the hands of some young Alaskan consumer. Can has a capacity of three gallons and once filled and sealed needs no more attention than any other canned food.

Close-up showing sampler which takes continuous sample of farmers' milk during transfer from farm tank to storage tank. It is checked for butterfat content, then contents of tank are brought to proper butterfat test by addition of cream or skim milk — under vacuum.

XUM

Milk tank, mounted on wheels, is kept on platform that is on the same level as bed of pickup truck. Here driver wheels empty, sterile farm tank into milk shed after loading full tank onto truck.



At plant farm tank is hoisted on monorail, weighed, and connected to preheating tank. Automatic control panel at right indicates whether preheating tanks are full or empty, controls steam valve to raise milk to desired temperature.

cial, wheeled tank (200 or 350 gallon size), which is kept on a platform that is the same height as the bed of the farm pick-up truck. Milk is drawn directly into this tank from the weigh-jars by vacuum, and is kept under vacuum until delivered at the plant. A quick twice-a-day collection system eliminates the need for cooling, and the use of the special tank completely eliminates can handling and washing. Tanks are rolled directly onto the bed of the pick-up truck with a minimum of handling and effort.

Milking equipment is cleaned by pumping a washing solution through the whole milking system. This solution is left in the lines until shortly before milking time, when it is rinsed out with fresh water. At intervals all pipes and equipment are dismantled for brushing and thorough cleaning.

Flanks and udders of cows are kept close clipped. When the cow enters the milking stall, her udder is sprayed with warm water to remove dirt particles and to stimulate the flow of milk. Udders are wiped with individual paper towels.

Transportation to Plant

Since it is well known that the heating and cooling of milk stimulates the action of lipase, which favors the development of rancidity, milk for the Med-O-Milk plant is not cooled but is rushed to the plant as soon as possible after milking. On arrival, the farm tank is rolled into the plant and hoisted on an electric hoist so that the milk will flow, by gravity, into the preheating tank.

When the farm tank is on the overhead hoist, it is weighed to give a record of the amount of milk going into the tank. A composite sample is taken, and the milk is standardized by the addition of fresh milk or cream which is obtained from the same carefully controlled sources and is also handled without exposure to air.

In the present set-up, there are four preheating tanks which are operated in sequence for continuous processing.

Sterilizing and Cooling

Standardized milk is pumped from the preheater tanks by a homogenizer, which breaks up the fat globules to prevent separation of cream in the canned product, and also acts as a high-pressure pump to force the milk through the heat exchanger at high velocity to prevent burn-on. Since failure to properly homogenize the milk would result in the formation of an objectionable cream plug in the cans, and would prevent the product from having the desired consistency, special precautions are taken to insure homogenization at adequate pressures.

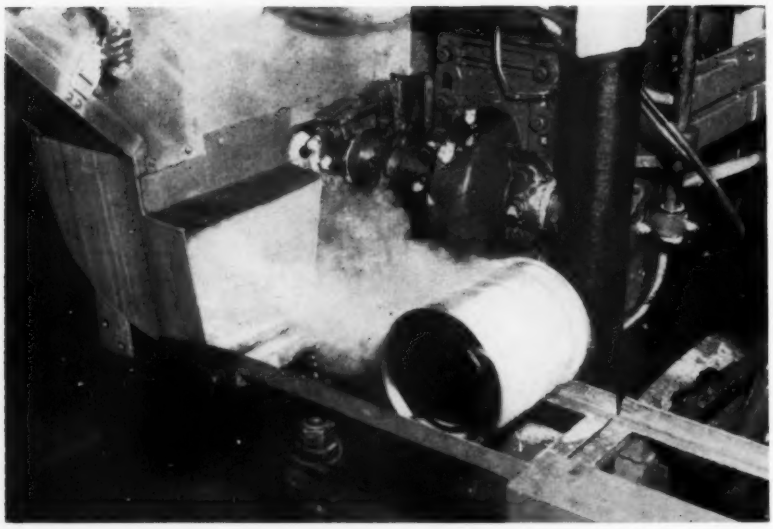
Both of the homogenizers used in the Med-O-Milk plant are equipped with pressure measuring systems, which record and indicate homogenization pressures. If the pressure in one of the homogenizers is not high enough, the instrument will light a signal light and sound an alarm buzzer to notify the operator that the homogenizer requires adjustment.

In order to render the milk completely sterile, temperatures approaching 300°F must be attained in the heat exchanger. A short holding time at this temperature kills off all bacteria present without causing any pronounced flavor change.

Sterilization of milk involves a lot of problems not encountered in pasteurization. Pathogenic organisms are easily killed, but in order to prepare a product that will keep for several months without refrigeration, it is necessary to destroy thermoduric and thermophilic organisms which survive and even reproduce at normal pasteurization temperatures.

To accomplish this job, it was necessary to design a new heat exchanger which would permit the rapid heating of milk to the required temperature. Experimental work done by the U. S. Department of Agriculture had established the practicality of a high velocity spiral-shell unit, and International adopted this proven principle. The heating and cooling units, which are about the size of ten-quart milk cans, are made up of a hollow stainless steel drum, with a spiral groove running around the outer surface, which fits into a stainless steel tube. Steam, (or refrigerant, in the case of the cooler) is circulated through the inside of the drum and also through the wall of the tube into which the drum is tightly fitted.

Milk, flowing at a high speed through the grooved space, is quickly heated to the necessary temperature and is held for the required time in



Filled and sealed can rolls out of Martin aseptic canning unit to be weighed and stacked to await shipment. Canning unit has its own alarm and signal panel operated by robot control system.

a conventional holding tube whose thermocouple is located at the end of the holding tube. A thermal limit controller operates a flow diversion valve if the product temperature should fall below the minimum.

Inasmuch as the milk has already been heated to a high temperature when it reaches the diversion valve, and it is not desirable to keep any positive pressure on the divert port of the valve, no attempt is made to recover any understerilized product. When diversion occurs, the superheated product, much of which immediately flashes into steam, drains to the floor where it is immediately washed down the drain.

Cooling the Product

In order to retain the flavor, it is essential that the product be cooled quickly after sterilization. For this reason, the same type of heat exchanger that is used for sterilization is also used for cooling. Due to the unique design, rapid cooling with a high degree of thermal efficiency is obtained.

No attempt is made to use regeneration for several reasons. The primary considerations in the entire International Milk Process are the sterility of the product and the protection of the product's fresh flavor. Because of this, the entire operation is designed to get the milk into the can as quickly as possible, in order to eliminate any chance that the sterile product will be contaminated.

Also, as mentioned above, the flavor of the sterile milk is protected by cooling it as quickly as possible after sterilization. Regenerative units would introduce a greater time lag into the system, to the detriment of the product's flavor.

Since the milk is received warm at the plant, and is preheated before entering the continuous processing system, the use of a regenerative system would not offer great enough benefits to justify the cost of extra equipment, much less the possible damage to the quality of the product.

Aseptic Canning Process

The sterilized and cooled product is sealed in sterilized cans by the Martin Aseptic Canning Process, under conditions which eliminate all chance of recontamination. When the product leaves the machines which make up this process, it is ready for storage and shipment, and requires no greater care than any other canned product.

The aseptic canning process, developed by Dr. William McKinley Martin, of the James Dole Engineering Company of Redwood City, California, consists of a can sterilizer, a cover sterilizer, a can filler, and a closing machine, with a built-in safety system which gives automatic supervision of the entire process.

Three-gallon cans are fed onto the conveyor that leads to the canning machine from the floor above. These are washed and sterilized by jets of superheated steam, at temperatures approaching 600°F in the can sterilizer. The sterile cans pass on to the filler, where they are filled in an atmosphere of superheated steam, and then to the seamer where they are sealed with sterile covers, still in an atmosphere of superheated steam.

Both the can and cover sterilizers contain integral gas heaters, which raise the temperature of the plant's steam supply to the required levels. The temperature of this steam is hot enough to char newspaper, but will not harm the lithographed cans during the short time of exposure.

A slight positive steam pressure is maintained throughout the completely-enclosed sterilizing, filling and seaming sections of the machine. This assures that a small quantity of steam will constantly flow from any openings in the machine to prevent the entry or air borne bacteria.

Temperatures at all vital points throughout the aseptic canning system are measured constantly by a dual safety system. The first half of this system is made up of six non-indicating controllers, which actuate signal lights on a central control board that is mounted above the can filler. As long as temperatures are at safe levels, the six signal lights on the control board remain lighted. If the temperature at any one of the critical points should fall below the proper level, the green light which represents that point is extinguished, and a red light flashes on. Simultaneously, the filler shuts down and a buzzer sounds to attract the attention of the operator.

Cans leaving the aseptic canning machine pass to a storage room where they are stacked until they are cased for shipment.

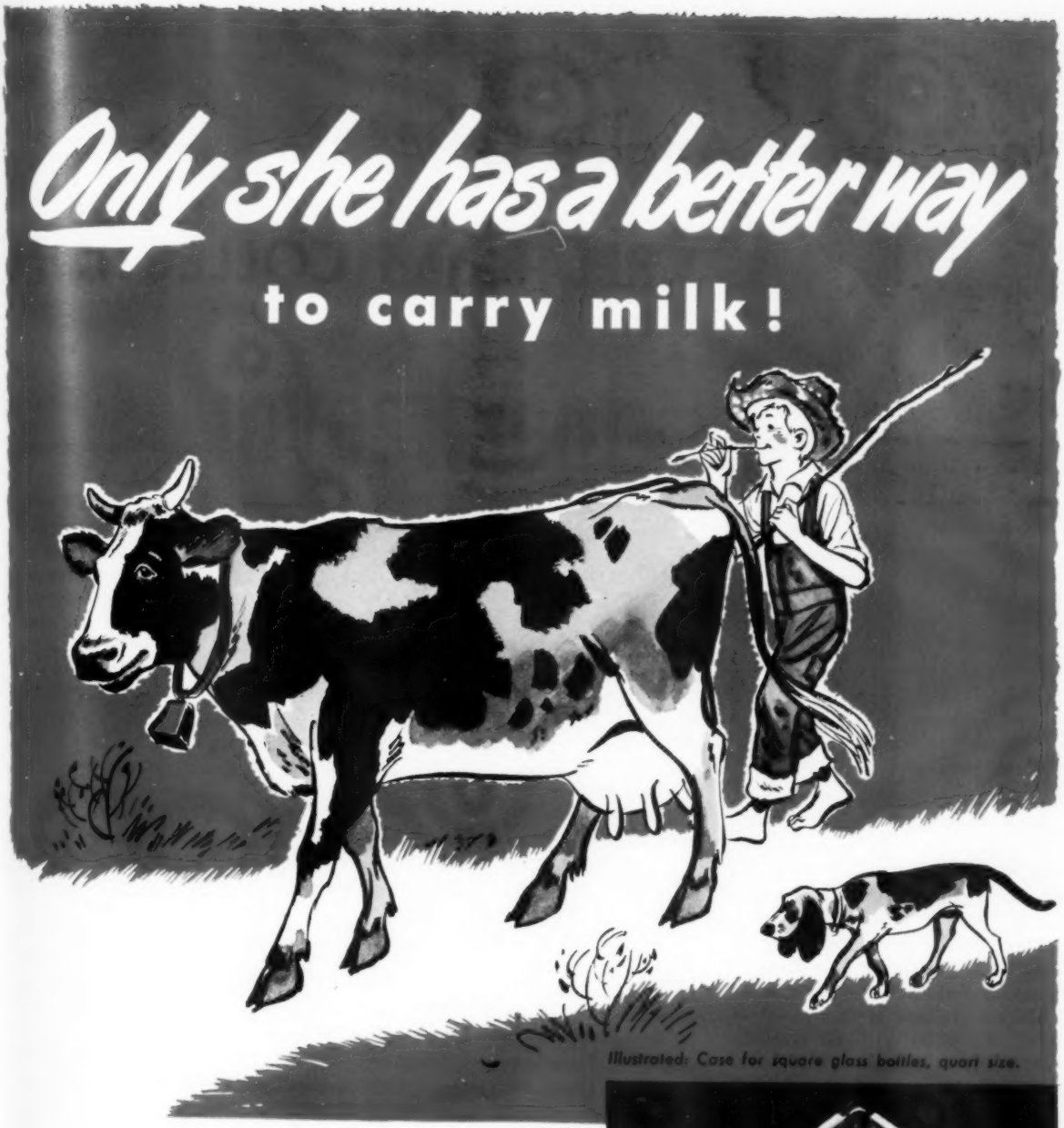
Summary or Process

There are three essential factors which have made it possible to can a sterile milk which will retain a fresh flavor through a long period of unrefrigerated storage. The most important of these is the new technique of handling milk under ideal conditions without exposure to air. It is impos-

(Please Turn to Page 60)

Only she has a better way

to carry milk!



Illustrated: Case for square glass bottles, quart size.

• Next to Bossy's personal transportation, Cumberland Cases are the safest, most economical way you'll find to carry milk. *The name "Cumberland" on any milk bottle case is your assurance of a better value—greater satisfaction.*

CUMBERLAND CASE COMPANY

CHATTANOOGA, TENNESSEE

Some New Angles On CREDIT and COLLECTION

Credit Cards, Coupon Books, Even Physicians and Banks Have Been Employed in Tactful Efforts to Collect Bills. With all this finesse, however, some dead beats still remain.

By R. C. BURTON

POSSIBLY no other problem has posed so many difficulties as the twinfold difficulties associated with modern credit and collection for the modern dairy. Let's take a look at how dairies in various sections of the nation are handling this dairy products bugaboo.

One dairy in Mobile, Alabama, discourages credit sales of milk, at least insofar as routemen are concerned, by issuing "coupon books." These books are a little different from the ordinary run of the mill. Each book contains coupons or tickets, each of which is good for a quart of milk, buttermilk, cream or associated product. These books are available in denominations of $3, $5, $7.50, $10 and upwards to $25 or more if desired. Each book contains tickets to the value of 5% more than the cost —hence a $20 coupon book contains $21 worth of negotiable coupons. However, all coupons in a given book must be used within three months time or they are no longer valid. Each book is issued to a particular family or individual and is NOT transferable as the old ticket books use to be. Each book is placed in an envelope with name of dairy stamped on it so that in event of loss, it may be returned to the rightful owner.

This same Mobile, Alabama, dairy also has a rotating window display which rotates from savings bank to savings bank throughout the community. This display changes monthly and consists of photographs of modern families who are customers of the dairy, plus graphs and charts which show the equipment in the dairy, its cost, statistics on average dairy payroll, taxes paid the city, state and nation, cost of maintenance and operation of delivery fleet, cost of building and building repairs. Each monthly display has from one to three photos illustrating dairy operation and no two displays are even remotely alike.

Each display also contains posters supplied by the bank having the display, posters suggesting that families open savings accounts so that sufficient funds for food and milk will be always available. Banks are most receptive, says this Southern dairy, because they realize that such displays attract their depositors and possibly many new depositors to the banking institutions fold.

Eighty-seven cents a pound for butter? Acme Dairy only charged 80 cents right up to the day they went bankrupt.

A dairy in Minneapolis, Minnesota, has a method of handling credit as regards its routemen. Any family may apply for a routeman's credit card. They fill out a brief questionnaire giving name of employer, bank, several references, all of which are painstakingly checked within twenty-four hours time by a local credit agency. If the agency approves, a card is issued allowing the family or individual to charge dairy products for one full month, payment to be made not later than the tenth of the followng month. All items, for example, purchased through the credit card method during February, must be paid for in full by March 10th. As soon as one account is paid, a NEW credit card is issued. New credit cards are handed out by the routeman on or about the 10th of each month with the proviso that the previous month's dairy purchases have been fully paid for. Old credit cards must be turned in to obtain new ones. On the reverse side of each month's credit card is space for the routeman's record of milk delivered and total payments due. On his final visit before the tenth or as near as possible to this date the routeman initials each card and places the total amount of milk purchased during the month on the card. All such cards contain name of family or individual and are, of course, dated.

This same Minneapolis dairy has another interesting item — which is brand new. It sends to each physician in the community a supply of several dozen of these credit cards which the physician may pass out to patients whom he feels will soon be on their

(Please Turn to Page 47)

ANOTHER REASON WHY

SHARPLES IS...

your best investment

you buy 35 years' experience in the food industry

Aerial view of The Sharples Corporation executive offices, engineering department, laboratories, and manufacturing plant in Philadelphia.

Sharples Cream Separators and Milk Clarifiers are preferred by the Dairy Industry today because of their proved ability to produce a better milk product at less cost. Why has Sharples been first to give you direct drive . . . permanently balanced bowls . . . sanitary floor mounting . . . stainless metal construction throughout . . . many of the other efficient features you can get in no other clarifier or separator? Because dependable, sanitary centrifuges have been our business for over a quarter of a century. Citrus products, edible vegetable oils, blood plasma, pineapple and tomato juice are just a few of the many applications. So naturally, this "know-how" led to the development of separators and clarifiers that meet every requirement for efficient dairy plant production. The Dairy Industry continues to benefit from the constant research and engineering development of our staff of dairy experts whose only job is to make still better equipment for the Dairy Industry . . . money in your pocket.

One Quality THE BEST—BUY SHARPLES

THE SHARPLES CORPORATION
DAIRY EQUIPMENT DIVISION
2300 Westmoreland Street, Philadelphia 40, Pa.

YOGHURT IN REVIEW

By GEORGE JAGGARD and MILTON W. RANSOM
of *The Dairy Laboratories*
Philadelphia, Pa.

IT HAS BEEN some time now since Yoghurt first burst, in Hollywood superlatives, upon the American Way of Life. Launched into dietary stardom by a best-seller, sky-rocketed to unprecedented popularity by *Reader's Digest*, and finally rationalized by the American Medical Association in the pages of *Today's Health*, Yoghurt can now settle down to being a food instead of a panacea.

Now that people can think clearly about Yoghurt, three rather interesting facts emerge.

The first is that a great many people have been eating Yoghurt for a great many years—in fact, a great many hundred years—before Yoghurt discovered America . . . and vice versa. While these people, mostly Southeastern Europeans, Asians and North Africans, were generally a hardy lot, they were noted neither for their beauty nor for their perpetual youth. Even in America, Yoghurt was enjoyed as a food long before it was practiced as a cult.

The second fact to emerge is simply this: when the tumult and the shouting died, the demand for Yoghurt did not die with it. That demand did not even shrink to its original proportions.

For Yoghurt, if it did not bestow psuedo-immortality, was at least pleasant to taste (for those who like fermented milks) and easy to digest. If it failed to rejuvenate, it at least nourished. Many people who, in the normal course of dietary events, would never have heard of Yoghurt, now eat (or drink) it regularly.

That parenthetical phrase "or drink" brings us to the third fact: Yoghurt, modernized and Americanized, is not one dairy product, but several. If Yoghurt added something "new" to the American diet, it is equally true that America added something new to Yoghurt.

In its traditional native form, Yoghurt was a custard-like semi-solid made from milk that had been boiled until sufficient of its water content had evaporated to double or treble the solid content.

Made In Many Forms

However, as we pointed out in previous articles* Yoghurt can be prepared in other forms, generally more suited to American tastes.

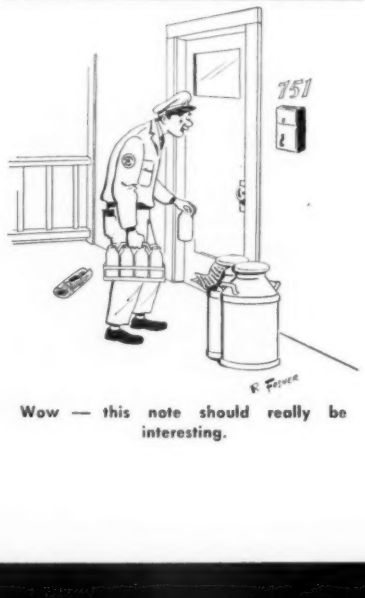
One of these forms is the liquid which we chose to call "Yoghurt Buttermilk." Another, semi-solid and thicker than the "Buttermilk," we called "Yoghurt Cream." Also, Yoghurt Culture may be used, if desired, to ripen Cream Cheese in the final package at appropriate temperatures to produce Yoghurt Cream Cheese.

The present demand for Yoghurt, following in the wake of the "Look Younger, Live Longer" fad, is one which has not always been fully met—especially by those who still think of Yoghurt as being primarily a custard. Yet other forms are gaining in popularity—and are not difficult to process.

Meeting A Varying Demand

It is not the purpose of this article to go into technical manufacturing details of Yoghurt Buttermilk and Yoghurt Cream. This has been done in previous articles; and dairies that are interested are encouraged to communicate with the authors. The main points we want to make here are: that three major kinds of Yoghurt exist . . . that the public is becoming ever more aware of that fact, and is demanding Yoghurt in the form they like best . . . and, finally, that this demand can be met economically and profitably.

Where the demand warrants, it will no doubt pay the dairy to process



Wow — this note should really be interesting.

***Yoghurt Buttermilk, published in the Milk Dealer—1951—and Yoghurt Cream, published in the Milk Plant Monthly—1951.**

Yoghurt in the form most popular in its particular market.

Where a a demand exists, but is not strong enough to make the processing of Yoghurt in finished form advisable, there is another, simpler way of meeting it. In such cases we suggest furnishing customers with Yoghurt capsules from which they can make their own home-made Yoghurt any way they like and still satisfy or stimulate the demand for greater milk or dairy product consumption. Capsules can be purchased in wholesale quantities. Under the trade name of "Flav-O-Lac Flakes," for example, is a capsule used for making Yoghurt. These capsules can be retailed to customers for home use.

Some dairies, of course, do not want to become involved in either the manufacture or the merchandising of Yoghurt in any form. Yet they are not immune to customer requests for this popular milk product. In order to cooperate with such dairies, the makers of Flav-O-Lac Flakes will mail C.O.D. a small retail package direct to the customer when requested by the dairy to do so. The package contains six Flav-O-Lac Flakes Yoghurt Capsules for home use, along with an instruction booklet. Where small amounts are involved, this method relieves the dairy from any inconvenience and helps it to maintain customer satisfaction.

●

CREDIT AND COLLECTION

(Continued from Page 44)

feet financially and who need milk meanwhile for their children or for sick members of the family. The physician accepts no responsibility for payments made by any of his or her patients but the majority do pony up and many become regular patrons of the dairy. Each physician, lawyer, schoolteacher and Main Street Merchant listed in the phone or city directory as possessing a store, office or being associated in some executive capacity with a local institution, any professional man or woman, these folks receive a credit card monthly through the mails which they may use if they so desire. All they need do is call the dairy and authorize commencement of milk delivery service. This dairy has found that business and professional men and women are keenly jealous of their good community credit name and are worthwhile credit risks for that very definite and valid reason.

But what to do with delinquent deadbeats who never intend to pay for milk purchased in the not too dim and distant past? That question has been handled effectively by a dairy in Dallas, Texas. Each month routemen turn in names of creatures who will not make even a small payment on their account. Such names are placed on a mimeographed "Bad Credit Risks" listing which is dispatched by the dairy to all local banks, credit agencies, and members of the local Chamber of Commerce. However, before the monthly list is intrusted to the U. S. Mails, individuals are called and if they make satisfactory payments or arrangements, they are deleted from that month's list and as a result, their good credit name is preserved, temporarily at least.

BOTH the Nofome and Nofome Streamflo Pumps have won unmatched performance records in the industry. Their three-bladed single-piece impeller is precision-designed to handle more pounds per hour without churning or foaming. Take-down is simple — clean-up is quick and easy. The few contact parts are carefully machined stainless steel or nickel alloy, highly polished to a gleaming finish. Both styles of pumps meet every sanitary code requirement. *Write for Bulletin 9C.*

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New York Dealers Show Industry To Government Officials

More Than A Hundred Individuals Participate In Third Annual Tour of Upstate Plants—Flush Period Impresses

THE CATSKILL MOUNTAIN'S resort area is in the heart of some of New York's choicest dairy country. Early in June both the resorts and the dairy industry were subject to a flash invasion by New York City milk dealers and their guests. Opinion among the five score groggy stalwarts who survived the rigorous late evening and early morning, if any, schedule was unanimous in proclaiming this Third Annual New York Milk Industry Tour the finest of the three.

Using famed, luxurious Grossinger Hotel as a base of operations milk dealers, government representatives, health department officials, two bankers, and several wandering scribes visited eleven top drawer dairy plants in verdant Delaware County. It is possible that one or two of the plants were in some other county but at six o'clock in the morning after an evening that ended at six o'clock in the morning nobody but the bus driver knew or cared.

Purpose of the annual tours has been to bring producers, government personnel, particularly Production and Marketing, and milk dealers, on to common ground. The idea had been to bring men in the industry, not connected with actual operations, out into the field so that they could see first hand the massive nature of the country plant operations and understand the true meaning of the flush period. By being exposed to the realities of an industry that can swell ten fold in a matter of days and then, after a few weeks, subside into a lesser volume, it was believed that a basic understanding would be created which would do much to extend the common ground upon which all of the members of the tour were standing. The premise has been a good one. The tours appear to have accomplished just that.

The business end of the tour involved visits to a variety of dairy plants. Some of them were primarily drying establishments. Some were cheese and butter making plants. Some were producing cream, ice cream mix, yoghurt, and sour cream. One was simply a cooling and holding plant and another was a large scale fluid milk processing point. Each plant had some unique characteristics that contributed to the broad picture that the tour was attempting to paint.

Plants Spic and Span

The plants were all good plants, up to their smokestacks in milk. Some were more modern than others but all showed gratifying evidence of good management and sound manufacturing practice. Absentees at the dinner preceding the first day's tour were accused of being out painting up their plants in anticipation of the coming visitation. If so, their labor was well spent for not a plant but was as clean and sparkling as the great hound's tooth.

Members of the New York milk industry tour stopped off for a lunch at the farm of Dr. E. Ogden Bush in Delhi, New York. Dr. Bush is a representative in the State legislature.

Images that remain on the mind's screen after two strenuous, kaleidoscopic days are the immaculate plant of Middletown Milk and Cream Company, at Fraser, New York, the massive drying facilities at Delaware County Farmers' Cooperative, Delhi, New York, the dual receiving arrangement on the spotless deck at the Dairymen's League plant in Delhi, the colorful jars being fed into the filling machine at Breakstone Brothers' plant Walton, New York (this was a yoghurt operation), and above all the vast quantities of milk that were stalking up the conveyors onto the decks.

Some preconceived notions were sustained by the tour, others were relegated to their proper place in the scheme of the dairy industry. The lavish, and we fear, expensive use of water was amply demonstrated by an unconscionable number of hose with water running freely from them, left lying on the tile floors. They fairly cried for more hose stations and automatic shut-off nozzles. The industry's need for a good, practical, sanitary metering device was never more in evidence. Tons of milk went into the weigh cans and each drop had to be recorded on the scales, read, and the reading inscribed on the account books. Nobody's fault but something for some bright-eyed young inventor, interested in a sizeable fortune, to shoot for. Packaging could stand a sound study and the application of some modern techniques. Doubtless there are reasons, one could not but wonder, however, at

XUM

Mrs. Dunn didn't explain *why* she changed dairies!

Mrs. Dunn is an ex-customer on one dairy's books . . . and a new customer on another's. This lady, like thousands of homemakers, doesn't comment very much about why she buys "here or there".

Some time ago she saw a Sealon Hooded milk bottle in her neighbor's kitchen and later she read about it in the Saturday Evening Post. She quickly realized that the closure on her neighbor's bottle was much more sanitary than the one she was receiving. She concluded that *if* her neighbor's dairy was more careful about the milk package, they might also be more careful about the milk.

So one day, she just up and switched.

Progressive dairies all over the country are finding out that the Sealon Hood not only impresses their own customers but also attracts many new customers like Mrs. Dunn.

Although there are many different kinds of so-called protective bottle caps, there is only one—Sealright's plastic-coated Sealon Hood —that goes *all the way* in protecting the "pouring lip" of the milk bottle. Because it is so outstanding—it "sells" on sight and Mrs. Dunn needs little explanation to recognize its superior features.

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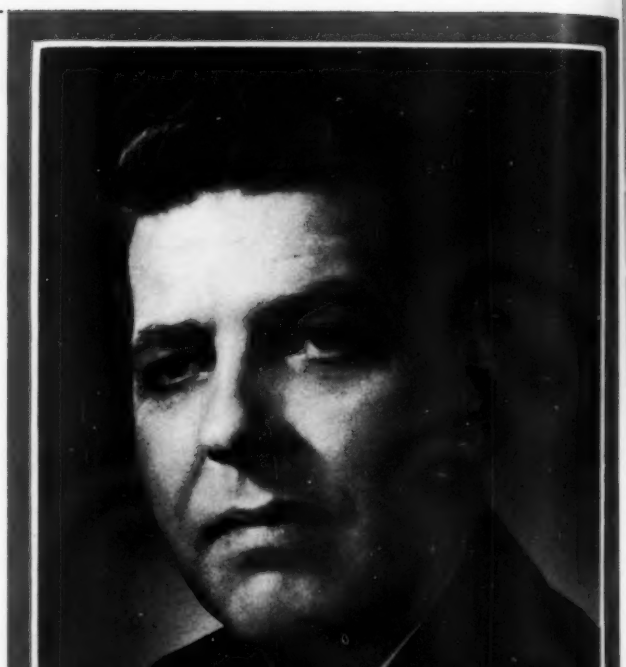

AMERICAN MILK REVIEW... MOST PRODUCTIVE ADVERTISING MEDIUM TO THE FLUID MILK INDUSTRY.

American MILK REVIEW

One of the nice touches of the Milk Industry Tour was this cake, presented to the visitors by the Grossinger management at the closing meal. Cutting the cake. which was just as good as it looks, is Preston Richards, Director of the Dairy Branch of the Production and Marketing Administration. Behind to the left is Irving Wisch, Chairman of the tour committee. To the right of Mr. Richards is Dr. C. J. Blanford, Market Administrator for New York, and Mr. Mark A. Lindley, General Manager, Tri-State Milk Producers Coop.

the spectacle of four people engaged in wrapping delicious cones of snow white farmer's cheese by hand. One woman brought up the cheeses from the cooler. One man took off the cloth sacks. One woman wrapped the cheeses in tissue paper, and one woman acted as general supplier and mover awayer. It was mighty good looking cheese with a terrific flavor but it took more people to wrap the stuff in paper than it took for the whole process up to that point. The same archaic technique was followed in wrapping in another plant. Butter came from the cutting machine down a conveyor to a couple of women who wrapped the quartered pounds by hand and then turned them over to a man who packed them into cardboard cartons for shipment. This was in sharp contrast to the yoghurt operation, previously mentioned, where an endless file of bright colored glass tumblers went under the filler and capper for an automatic mechanical treatment. That was a first class mid-century packaging proposition.

Presumably one of the explanations for a dearth of expensive packaging machinery is the short period during which these operations are necessary. The flush period was never more dramatically presented. If this is the reason, then the need for a program that will reduce the wild zoom of production during that flush period is certainly in order. Some plants reported increases as much as ten fold over their ordinary receipts. Indeed one or two plants only operate three months out of the year. It was a graphic presentation of the problems of the flush period, a presentation that was not lost on visiting representatives from the fountainhead of pricing policies. It would be a fine thing if her bovine majesty could also get the word.

Athletes and Rocking Chairs

The tour was not without its lighter moments. Holed up for the night in some of the Grossinger's delightful fourteen or fifteen room cottages, the brethren gave themselves over to as fascinating a group of extra-curricula activities as one would hope to find. From the learned jurist who strove valiantly to get out of the box (a term that has meaning only to those who have attempted to master the rhumba), to the tall Texan of the polished pate who swept

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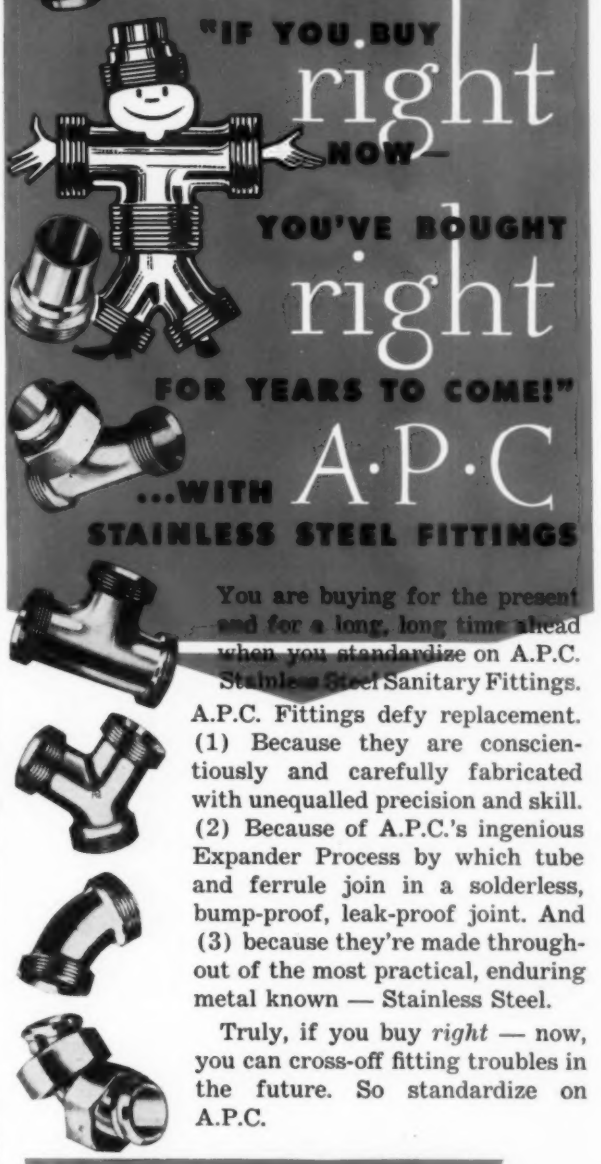

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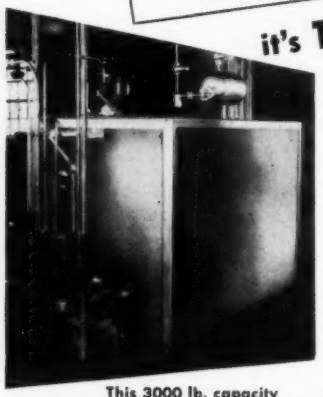

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the tennis tournament, there was activity for all. Grossingers, with its pine paneled dining room boasting a seating capacity of 1500, its eight tennis courts, its superb golf course, its riding stables and swimming pool and private flying field was a little on the breath-taking side. Members of the tour took advantage of the resort's magnificent hospitality and followed the sun or just sat in its afternoon magic as their fancy and blood pressure dictated.

Arrangements for the tour were made by a committee headed by Irving Wisch, president of the Milk Handlers and Processors Association of New York City. He was assisted by Kenneth Fober of the Market Administrator's office and Horace Sheldon of the Milk Dealers Association of Metropolitan New York.

Guests included Preston Richards, Director of the Dairy Branch of the Production and Marketing Administration, Thomas J. Flavin, Judicial Officer, United States Department of Agriculture, Don S. Anderson, Deputy Director, Dairy Branch, Production and Marketing Administration, Daniel J. Carey, Assistant to the Secretary of Agriculture, United States Department of Agriculture, Robert B. Child, Field Secretary, Rural Radio Foundation, Paul Corash and Edwin Ludwig, both of the Department of Health, New York City, Roy Lennartson, Assistant Administrator for Marketing, Production and Marketing Administration, F. B. Whitlock, Vice-President, Central Hanover Bank and Trust Company, New York City. There were a number of other distinguished guests but the tour and Grossingers did far more for them than can be done by printing their names here. They've been on a New York Milk Industry tour and more than that no man can ask.

●

FOXBORO NAMES L. M. RICHARDSON

The Foxboro Company, manufacturer of industrial instruments for measurement and control, announces the appointment of Lyle M. Richardson as Sales Manager of the company's Food Industries Division, located at the home office, Foxboro, Mass. Before joining the Foxboro Company Mr. Richardson was Supervisor of Technical Services with Lever Bros. in their Edible Products Department.

Mr. Richardson has been associated with the food industry for many years and is thoroughly familiar with its technological and marketing phases. After receiving his B.S. Degree in Food Technology from the Massachusetts Institute of Technology in 1941, he served five years in the Army where he was in charge of development work on packaged foods at the Subsistence Research and Development Laboratory of the Quartermaster Corps in Chicago.

Following his Army service he became associated with the National Tea Company in charge of quality control, later joining Beatrice Foods Company, as Manager of the Special Products Division. He went to Lever Bros. in 1948.

PUBLIC RELATIONS IS SALES AID

New Jersey Dealers Hold Second Annual Forum and Banquet — Producer-Routeman-Dealer Team Stressed by Speakers

NEW JERSEY'S youthful Milk Industry Association took an impressive swing at the public relations ball late in May. From all reports the pellet is still travelling. The occasion was the association's Second Annual Public Relations Forum and Banquet. The theme was one calculated to make milk dealers sit up and take notice. It was, "More Sales Through Better Public Relations."

Although, breathing the air of healthy competition only a scant twelve months, the association has already established itself as an organization to watch in the field of public relations. It operates in the difficult New Jersey market where the influence of the giant Philadelphia and New York operations is compounded by a political complex as difficult to grasp as the legendary greased pig.

One of the outstanding activities of New Jersey's burgeoning Milk Industry Association PR program is an Annual Award to an outstanding producer. Photo shows presentation of 1951 Award.

Opening gun in the forum was fired by Bo Adlerbert, whose modern Sunrise Dairies in Hillside, New Jersey, is a choice example of a mid-twentieth century milk plant. Mr. Adlerbert discussed the "do's" and "don'ts" of plant visitations. He emphasized that plant visits should not be considered as a device to capture an audience for solicitation. "We usually pick up some customers as the result of visit," he said, "but that is incidental to what we are trying to do." The main purpose of this sort of public relations, Mr. Adlerbert asserted, is to give people in the community some idea of the care, expense, and work that goes into the production of a quality product. He stressed the need for keeping the program moving so that visitors do not become restive. "Statistics," he declared, "are poison. Show a group of visitors an impressive array of complicated statistics, even simple statistics, and you have gone a long way toward destroying their interest in the plant." Mr. Adlerbert said that his organization had experienced the most satisfactory results from adult groups. He did not

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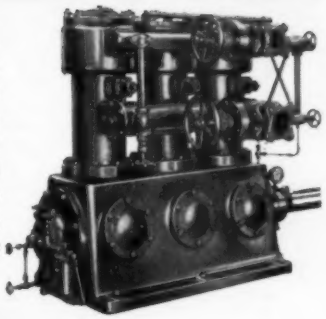

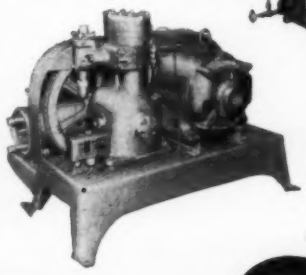

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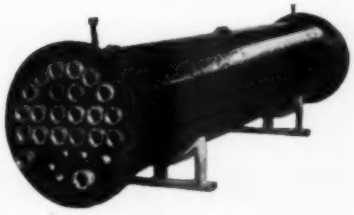

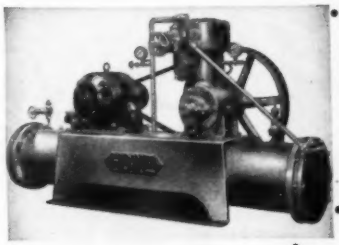

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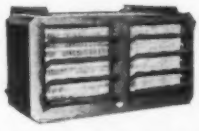

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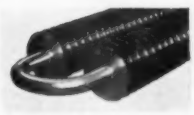

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AT THE TURN OF THE CENTURY

In 1898, thousands of men and women stormed the Dawson trail in Alaska in an effort to reach the Klondyke during the world's maddest gold stampede.

In 1901, just three years after this historic event, Benjamin P. Forbes started in the chocolate business as the "Forbes Chocolate Co." FOR 50 YEARS the name FORBES has been identified with quality and flavor.

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think that visitations by children were particularly worthwhile.

Driver-Salesmen Important

"Good Public Relations Depend On Driver-Salesmen" was the area explored by John P. Lancy, Supplee-Wills-Jones Milk Co., Philadelphia. Mr. Lancy characterized the driver-salesmen as the most important contact the milk company has with the public. "To the average customer the driver-salesman is the company," he said. He demonstrated the connection between the public relations minded driver-salesman and route volume by citing the example of a top salesman who was forced to turn his route over to a substitute because of illness. The substitute, not of the same calibre, delivered the milk but lost the customers. Subsequent examination of the case revealed that the substitute had failed to carry out most of the friendly little touches that had made his predecessor such a success. They were not sales methods, they were public relations practices.

Mr. Lancy pointed out the need for neatness in the appearance of driver-salesmen. Clean trucks and a general sparkling atmosphere, he said, are essential to the public relations program.

A producer, Mr. Vincent K. Flannery, told the remarkable story of how a group of producers teamed up with a dealer to promote the sale of milk for their mutual benefit. Raritan Valley Farms was the dealer. The program called for a producer contribution of ten cents a hundred to be matched by an equal dealer contribution. The fund thus raised was used to buy bill board advertising space, radio time, newspaper space, and other advertising and promotional services. The group even went so far as to produce a short movie. Mr. Flannery cited the efforts of his group, and the increased sales that have resulted, as an example what can be accomplished when dealer and producer gears are meshing properly.

The question period that followed the formal part of the forum was an extremely healthy symptom. Questions flew thick and fast, so much so that one wonders whether or not the group would still be in session, had not moderator Dan Wettlin called a halt to the proceedings in the interest of keeping events on schedule.

Professor Richard C. Reager of Rutgers University, topped off the forum with an address on "Let's Tell Our Story Well." Ordinarily in reporting a meeting such as this, one pays a few pieces of respect to the principal speaker and calls it a day. Can't do it in the current instance. This boy really had it. His point was simple but he gave it an everlastingly good going over. "If you don't tell your own story and tell it well, nobody else is going to tell it for you." That, in a nutshell, was what the good professor had to say and said it so that it stuck.

In sum the Second Annual Forum was a heatrening demonstration of a concerted effort by a determined group of men to come to grips with a problem that is common to them all. The spirited participation of milk handlers in the open discussions was an encouraging indication of enlightened business thinking. Possibly the most outstanding feature was Mr. Flannery's remarkable story of dealer-producer promotional activities.

ALWAYS SELL BENEFITS

By FRANK GRAY

In every sales presentation the matter of price comes up for discussion at one time or another. The salesman is called upon to justify price by proving value. In attempting to do this, the real meaning of value is sometimes overlooked.

Value can be shown only in benefits to the customer. Let us amplify this a little. A suit of clothes may be made of costly material and, therefore, have high intrinsic value. Yet, it may be poorly tailored or may not wear well and, therefore, would be of questionable value to the man who buys it. The same applies to other products. A beverage, for instance, might be made of the finest of ingredients but if the brand is not well advertised it will not be recognized by the consumer or accepted by the dealer.

We so often find in written and verbal selling that arguments are used to establish quality through manufacturing details, materials used, workmanship employed. The average buyer is not so much interested in these things as in end results—comfort, pleasure, economy, private ownership, time saving and, in the case of the dealer, profit.

Following this line of thought, when we sell insurance we sell peace of mind; when selling shoes we are selling foot comfort and good appearance. The sales appeal of furniture is found in harmonious and comfortable home surroundings, while the pleasure and profit of craftsmanship sells plenty of tools. The predominate appeals of beverages are: flavor enjoyment, refreshing pick up, and discriminating hospitality.

There are intangible elements of value which are beneficial to the supplier. Prompt and intelligent handling of all complaints, courteous replies to requests for information, efficient delivery service, are a few of them. The reliability and capability of the company has much to do in establishing the value of the product.

It is the salesman's objective to find the buying incentives and demonstrate how his product satisfies them. Obviously, they vary with each class of buyer –the dealer is interested in easy and profitable turnover, an assured margin of profit, and service which can be depended upon. The consumer is interested only in his own comforts, satisfactions and conveniences. These are the keys which unlock the doors of sales resistance.

Prove that your product conforms to a high standard of quality, that it costs less because it gives more, that it is backed up by good service and responsible guarantee, and it should take no persuasion to get the name of the prospect on the proverbial dotted line.

STOELTING

ADVANCED EQUIPMENT

★ Modern Design
★ Finest Stainless Steel Craftsmanship
★ Plant Layout and Engineering

STOELTING Standard and Deluxe Model Pasteurizers

SIZES FOR EVERY NEED

20, 30, 50, 75, 100, 200, 300, 500 Gallons

"FLAVORITE" DRY STEAM HEATING

Stoelting offers one of the most popular and complete lines of all-size Standard and Deluxe Model Dry Steam Pasteurizers in the nation . . . the "Flavorite" . . . time-honored throughout dairyland. The same fine engineering and expert fabrication that has made the 100, 200, 300, and 500 gallon "Flavorite" the favorite in so many creameries and milk plants, goes into the 20, 30, 50, and 75 gallon "Flavorites". The Stoelting principle of Dry Steam Heating assures preservation of a deep cream line and sweet fresh flavor of the milk. A special inclined propellor type agitator keeps the milk moving gently without foam regardless of the amount being pasteurized. Agitator is driven by a gear-head motor entirely enclosed and self-lubricated. Motor uncouples instantly from agitator shaft and swings to one side for quick and easy cleaning of the machine. Whether you need a small or large pasteurizer . . . for starter, milk, cream, sour cream, buttermilk, chocolate milk, or other dairy products . . . choose a Stoelting "Flavorite" right in size, right in price, right in quality.

Stoelting Also is a National Manufacturer of Intake and Weighing Equipment, Cold Milk Filters, Tanks, Cottage Cheese Vats, Canwashers, Conveyors, Sanitary Pipe Washing Machines, and other popular items.

STOELTING BROTHERS CO.

Manufacturing Engineers for the Dairy Industries

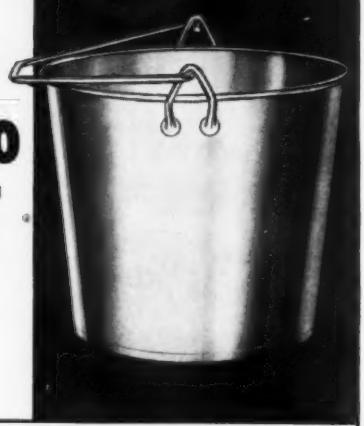
KIEL • WISCONSIN

SUPERIOR

Pails Built to LAST

•

Seamless
Solderless
Sanitary



JOHN WOOD COMPANY
SUPERIOR METALWARE DIVISION
509 Front Avenue • St. Paul 3, Minnesota

JOHN WOOD Est. 1867

ALL ALUMINUM

Hollingsworth TRUCK REFRIGERATORS

- Stainless steel runners reduce case friction.
- Completely sealed. Moisture cannot decompose insulation.
- Padlock holes in latches.
- Holds 2 ice trays plus 3 quart cases and 1 pint tray.
- Moderately priced.

● Here is a truck refrigerator that affords all of the "most-wanted" features. This quality box features lifetime, all aluminum, airplane type construction . . . riveted for super strength. Nickel plated screws and stainless steel hardware make the entire assembly rust-proof. Double than normal insulation gives you maximum cooling efficiency and economy. Fifty pounds of ice maintains a 44° temperature for 30 hours in a 96° outside heat. Best of all, the Hollingsworth Truck Refrigerator is designed for complete space utilization. Model illustrated fits contour of Divco Truck Body.

Standard Boxes in Stock for All Makes of Milk Delivery Trucks . . . Special Boxes Made to Order.

JOHN R. HOLLINGSWORTH CORP.
CLIFTON HEIGHTS ● PENNSYLVANIA

MILK LOW COST FOOD SURVEY SHOWS

Milk Industry Foundation Reports Milk Prices Have Gone Up Less Than Other Food

New surveys show that milk is a low cost food today delivered to consumers at prices that have gone up considerably less than average food costs, according to the Milk Industry Foundation.

The economy record of milk compared to the all-foods index has been maintained despite wages, operating expense and raw product costs continuing at the highest levels. New Government price index figures show that milk is 40 points below the average increase in the cost of the family market basket, based on pre-war averages.

Surveys also show that fresh milk is the most widely used family food. Nutritionists say that larger food budgets would be needed in the home if the vitamins, minerals and calories supplied by milk had to be secured from other sources.

Milk No. 1 Food Favorite

House-to-house interviews show that milk is the No. 1 food favorite and that mothers consider it the most essential food of all. Seven out of every 10 American housewives are aware of the high nutritive value of milk. Housewives asked to name the most important foods picked milk first and also said it is the last food they would cut down.

The U. S. Public Health Service says: "Of all the factors of man's environment, none is more important to his welfare than food. Of all foods, none is more important than milk."

A quart of milk — 4 glasses — supplies approximately these percentages of the daily nutritive requirements of an average person: calcium 100% plus, riboflavin 93%; phosphorus 61%; protein 49%; vitamin A 31%; thiamin (vitamin B_1) 23%; calories 22%; ascorbic acid 17%; niacin 7%; iron 5%.

Best Food Investment

Food scientists say milk is one of the best food investments at any price. Family diets limited in variety lack health essentials which milk furnishes at low cost. There is no waste in milk as every drop can be used. A quart of milk is more than two pounds of food, a fact that spotlights its economy.

Dr. Pauline Mary Mack of Pennsylvania State College says "Results of a 15-year study show that adults fail to consume adequate milk for physical well-being" and recommends six quarts of milk a week.

Fresh milk is easier to get and safer to drink in the U. S. than anywhere else. In 1900 the average American had to work 27 minutes to buy a quart of milk which was generally dipped from a can. Today only 8 minutes of work provide a high quality pasteurized bottled quart of milk. In Russia it takes almost an hour's work for a quart of milk if there is any.

The long processes of raising better cows, growing improved feeds, developing new methods of milking, more efficient and rapid transport, new laboratory methods, pasteurization and other advances have made the milk industry an important U. S. food and health asset in critical times.

CAUSES OF OXIDIZED FLAVOR

Prof. Vladimir N. Krukovsky, Cornell University, told members of the American Dairy Science Association that experiments show oxidized flavor in milk to depend on the relative amounts of non-flavor forming compounds, the amount of tocopherol (vitamin E), and on the preferential oxidation of flavor forming and non-flavor forming compounds.

He pointed out that the availability of the non-flavor forming compounds and the assimilation and deposition of tocopherols into the milk fat are determined by the physiological behavior of the cow and the type and quality of the feed she eats.

The Research and Development Laboratory of the U. S. Quartermaster General in a recent report states:

"The excellent nutritional value of milk is well known. Milk itself is one of the few foods which can be consumed daily without becoming monotonous. Milk fat is 99% digestible."

●

DAIRY FOODS SUPPLY 13 MINERALS

Calcium Is Nutrient Found to Be Lacking in Diets Most Frequently — Dairy Foods Supply 75 Per Cent of this Mineral

Thirteen different minerals essential to normal life and health are provided adequately in a mixed diet of dairy foods (milk, cheese, ice cream, and butter), eggs, meat, fruit, vegetables and cereals, the National Dairy Council points out in the latest issue of the *Dairy Council Digests.*

The essential minerals are listed in this documented report as calcium, phosphorous, magnesium, iron, copper, iodine, sodium, potassium, chlorine, manganese, zinc, sulphur, and cobalt. The report was prepared by Dr. Zoe E. Anderson, Director, Department of Research and Nutrition Service. It stresses the dietary importance of these minerals.

Calcium, present in all body cells and the major substance of bones and teeth, and iodine, part of the thyroid hormone, are the only mineral deficiencies commonly found in the population of the United States.

Calcium Lacking Most Often

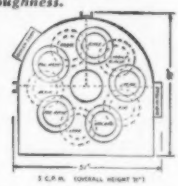
Surveys conducted in cities show calcium is the nutrient most frequently found to be deficient in the diet. Inasmuch as milk, cheese, and ice cream supply about 75 percent of the Nation's available food calcium, this deficiency can be overcome through the liberal use of these foods in family meals. In areas where iodine is deficient, regular use of iodized salt will insure adequate intake of that mineral.

Milk, cheese, and ice cream further provide substantial quantities of phosphorous, sodium, potassium, chlorine, magnesium, and sulphur; significant amount of zinc, copper, and cobalt; and less significant amounts of iron, iodine and manganese.

CATTARAUGUS
Home of Jack the Giant-Killer!

Influenza or Grippe Bacillus—a tough proposition. Tornado slaughters 'em.

***PURITY** Tornado Rotary Washer Model 50. Diagram shows how we pack ten complete steps in a five-step machine. 51" x 53" floor space over all. Really washes, rinses, sterilizes and dries with big-machine thoroughness.*



PACKS A SUPER-DUTY PUNCH!

Tornado Action

CATTARAUGUS: *Nestled high in the beautiful uplands of western New York State is this community of contented, thrifty, skilled PURITY workers. Just can't help building their own sturdy character into every piece of equipment they produce.*

THIS is the little washer with the big fist! Not a makeshift, but a full-fledged machine. The PURITY patented "two-step" movement is the secret of its tremendous efficiency. Within its wonderful but diminutive jacket, the three-can machine above holds but five cans. But it actually possesses twice that many processing positions, as follows: Load, Pre-rinse, Drain, Solution-wash, Drain, Rinse, Sterile Rinse, Live Steam, Air Dry, and Unload. (Each can receives nine seconds of concentrated "Tornado washing treatment.") Imagine packing all that inside the jacket of a little three-can machine!

No Superduty could do a more thorough job. Write at once for handsome descriptive bulletin.

PURITY
Manufacturing Company, Inc.

MILK HANDLING MACHINERY & EQUIPMENT
Oakes & Burger, Inc., Sole Distributors
CATTARAUGUS, N. Y., U. S. A.
EST. 1873 Over seventy-five years of honest equipment

CONNECTICUT

(Continued from Page 12)

ing yet it gives good circulation.

The pumping arrangement has undergone the most extensive alterations. The original method was to carry the pump at the side of the truck underneath the tank. It was driven by a take-off from the truck's drive shaft. This arrangement proved to be somewhat cumbersome and slow. The present method utilizes an electrically driven pump mounted at the rear of the truck in an enclosed cabinet. The pump is driven by a 1 horse power motor that operates on 220 volts. Each milk house has a plug conveniently located on the outside so that the driver simply plugs in an extension cord to get the power.

Use Two Sets of Hose

The connection between the truck and the farm tank is made by using a short lenth of stainless steel pipe at the tank and a section of 1½" brewer's hose about eight feet long. Two sets of hose are used, one one day, the other the next. While one is in use the other is at the plant getting a thorough cleaning. This practice is followed in order to get a completely sanitary hose. During trips between farms the hose is capped with a metal plug and the front half carried in a metal tube mounted on the rear of the truck near the pump. The hose is held in place during the trip by short length of chain with a snap on the end that engages a ring on the hose. When the last pickup has been made the driver disconnects, flushes out the hose and fills it with a lye solution. The hose is placed in a stainless steel tube on the truck. The tube is used for carrying the hose to and from the pickup area.

The tank truck driver, who is a licensed weigher and sampler, first measures the amount of milk in the holding tank and then starts the agitator. While the agitator is mixing up the milk so that a representative sample can be taken, the driver plugs in his power line and makes the connection between tank and truck. This takes three or four minutes. By this time the milk has been adequately circulated. The driver takes a sample of the milk from five or six widely separated points in the tank and puts all of the samples together in a strip cup. These samples are mixed together and the composite is put into two butterfat test bottles, one for the farmer and the other for the plant. The plant samples are carried in an iced box slung at the side of the truck underneath the tank. The pump is turned on when these preliminaries have been completed. At this point the milk becomes the property of the milk company. The driver makes out two slips specifying the amount of milk in the tank. He leaves one with the producer and takes the other one back to the plant. It takes between five and seven minutes to pump out the tank depending on the amount of milk. When the tank is empty the driver rinses out the tank with cold water, uncouples his hose and is ready to move on to the next stop. The total time at a single stop averages around 14 minutes. At one farm, where the production amounted to 14 cans, the entire operation from beginning to end took 9½ minutes. At another farm, where 22 cans of milk were in the tank, it took 6 minutes to pump out the tank.

The ability of the farmer to get a clean, sterile holding tank has been one of the major problems in the eyes of health department officials. Bryant and Chapman officials say that they have experienced little trouble in this respect. The farmers are apparently doing a good job. The practice is to rinse out with cold water first, this is usually done by the driver. The rinse is followed later on with a complete washing with a detergent. The cleaning operation takes about ten minutes according to the producers.

In addition to the measuring and butterfat sampling methods, the system appeals to farmers because it cuts down on their shrinkage problem. One farmer told me that he had kept careful records of his shipments before and after going into a farm tank operation. His calculations showed a saving in shrinkage that averaged about twenty-five dollars a month. Other farmers related similar experiences.

Farmers Own Tanks

The farmers own the tanks. Although a sizeable investment is involved they do not appear to hesitate to undertake the necessary financial obligations. The Bryant and Chapman organization has made arrangements with a particular bank to finance the purchase of these tanks should the farmer desire such assistance. Most of the producers, however, prefer to deal through their own banks where they are known and where they can get a lower interest rate.

The small three and four can producers are not included in the present routes. That they may eventually be able to participate in a tank truck pickup system does not appear beyond a reasonable possibility. Two factors are involved. One is the size of the investment in relation to the amount of business the farmer is doing. The other is a question of the minimum amount of milk necessary to make a tank truck stop economically feasible. On the first count competent farm management students can find an answer. On the latter count the solution appears to lie in every other day pickup. Although this is contrary to existing health laws in some markets, there is a trend in health circles to consider it as a possibility. Indeed, there is a bill in the Connecticut legislature at the moment which proposes to make every other day pickup legal. The bill is not having an easy time but the fact that it was introduced and considered is an indication of a trend of thought.

This is the third time that the editor of the *American Milk Review* has made the tank truck circuit. Each time there have been changes in method, improvements, new producers, more efficient techniques as experience has shown what is necessary

Better Dairies Everywhere Are Switching to
HAYNES SNAP-TITE NEOPRENE GASKETS
for Sanitary Fittings
Order through your favorite jobber.

XUM

and good and what can be discarded. Without any question the most impressive part of the journey has always been the enthusiastic reaction of the producers and the change in their attitude toward quality milk production. Before they were farmers, good ones to be sure, but they were primarily farmers. Today they are producers of quality milk and between the two there is a vast differece. It is an attitude made up of a businessman's sense of value and a craftsman's pride in his work.

How far this system of handling milk can go is, of course, purely speculative. Whether it would work in areas far from the milk plant or where remote farms are the rule is an open question. Whether small producers can take advantage of the system and whether health departments will accept it on a large scale is also unknown. The only safe ground is the ground already explored by those handlers who have instituted the system. With Bryant and Chapman the quality of milk, the enthusiasm of the farmers, and the constantly expanding routes are sound evidence that the system which they have set up is one that has met every test. Their operation is out of the pilot stage and is now a full fledged, practical dairy plant operation.

●

LET'S TALK ACCOUNTING

(Continued from Page 22)

what their future purchasing power at realization date may be. That's usually the case in any business. Those dollars, or their purchasing power, cannot be measured nor even estimated with any degree of accuracy at all, even assuming that measures of depreciation, credit losses and the like were properly gauged in the first place. The great difficulty is, we're dealing with past costs, present and future allocations of those costs, and future values.

In addition to these economic and accounting difficulties, other factors in measuring and comparing profits arise. The proprietory structure of a business determines to a large extent how profits shall be computed. In its simplest form—a single proprietorship—the cash drawings and living expense items of the single proprietor are not counted as charges against income. Net profits are computed before such expenditures. In some cases, an attempt is made to impute some expense to the business for its proprietor's services to it, but it's only a guess, at best, and such amount, whether imputed or actual, cannot be an expense of the business in figuring income taxes. Let that single proprietor incorporate, however, and his drawings or salary other than dividends, become expenses properly chargeable against income. The corporate income tax also is a charge against income for final corporate net profit determination. We can have, therefore, two companies, each with the same sales and so-called operating expenses. Because of a proprietory or equity legal fiction, their net profits can be quite far apart.

What to do about it all? Nothing. Just be aware, in reading your statements and others, that the facts of a balance sheet balancing, and a profit and loss statement tieing into it, both to the last penny, are misleading facts. Unless your business is so small and insignificant that you can keep books in your head, be sure your records are adequate, properly installed, and correctly operated.

GET EXTRA HOLDING SPACE AT YOUR PLANT...

with STURDY-BUILT REFRIGERATED STORAGE DEPOTS

STURDY-BUILT HIGH OR LOW TEMPERATURE REFRIGERATED STORAGE DEPOTS GIVE YOU . . .

QUALITY CONSTRUCTION

Finest materials, finest workmanship. Built entirely under one roof for quality control of every detail. Thoroughly test run before shipment.

LOW PRICES

Low first cost, low maintenance cost make Sturdy-Built depots pay for themselves quickly in use.

You can have that extra holding space you need at low cost. No worries about building restrictions. No on-site assembling or construction. Sturdy-Built refrigerated depots are complete, all-in-one units . . . shipped ready to use. Easily moved. Speed loading. Write today for complete information on low cost holding space for your plant.

STURDY-BUILT

F. B. DICKINSON & CO.
Highland Park Station, Des Moines, Iowa

FRESH CANNED MILK

(Continued from Page 42)

sible to manufacture a satisfactory milk of beverage quality from a raw material in which flavor changes due to bacteria, enzymes, oxidation, or chemicals have already begun; or from milk whose flavor has already been contaminated by exposure to strong odors from foreign sources.

The vital step in the International process is that the original flavor is protected throughout gathering, and throughout the sterilizing and cooling operation.

The second essential factor in the process developed by International is Dr. Martin's aseptic canning process, which makes it possible to fill the sterile product into sterile cans and to seal it under conditions which preclude all possibility of contamination.

The third factor in the new process is the development of automatic measuring, recording and controlling devices which make it almost impossible for the process operators to ignore any change that might harm the quality of the product. All instruments and controls are centralized at central points, where they are under the constant attention of the process operators. Signal lights are used throughout to aid the operator in the instant location of any deviation; while automatic control is used wherever necessary to compensate for minor changes before they can assume serious proportions.

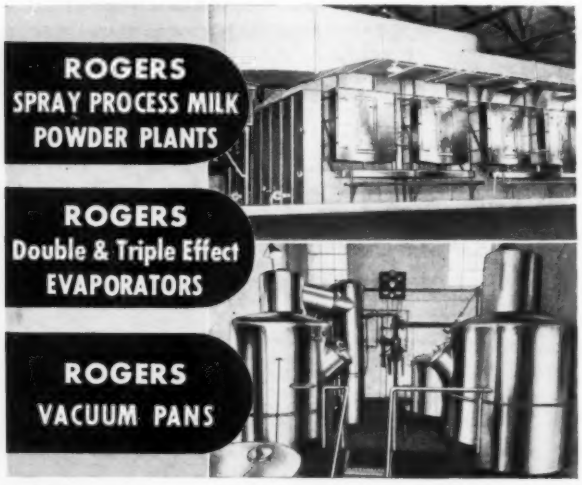
Commercial Aspects of International's Process

As might be gathered from the company's name, International Milk Processors, Inc., is primarily interested in distributing milk, gathered from this country's plentiful supply, to overseas markets. Meadowmoor Dairies, one of the backers of the Med-O-Milk plant, have had experience in shipping milk to the Alaska market via air freight, and are very familiar with the fact that fresh milk commands a premium price on the Alaska market. Until now, almost half of the cost of the milk they have been selling in Alaska has been due to high shipping costs. The new canning process will reduce this high cost by making it possible to ship by cheaper transportation, and will also make it possible to keep milk on hand for long periods of time.

Since there are many other countries, particularly in the orient and South America, where milk commands a high price because of its scarcity, Med-O-Milk's shipments will all be for overseas or shipboard use.

International Milk Processors, Inc. foresees a number of similar plants, set up in areas of the country where milk can be produced at low cost, and where there are not large urban populations to absorb the available supply. The country around East Stanwood, where the present plant is located, is typical of the areas International regards as promising milksheds. Good hay crops are possible, feeds can be raised economically and pastures are good even though cows can be kept on grass for only a relatively short period of the year.

In such areas, it is possible to produce high-quality milk economically. By making it possible to ship milk from such areas to remote markets, International Milk Processors, Inc. has opened new horizons for the dairy industry.



Rogers ADVANCED ENGINEERING
MEANS PLUS-PROFITS FOR YOU

Rogers' nationwide network of installations throughout America's Dairyland and Rogers' continuing research are your best assurance of today's most modern Vacuum Pans, Second Effects for Vacuum Pans, Double and Triple Effect Evaporators, and Spray Process Milk Powder Plants. Let Rogers help you in your planning.

"The Choice of Dairyland" Since 1883.. Rogers

C. E. ROGERS COMPANY, 8731 WITT ST., DETROIT 9, MICH.

When Shipping Poultry & Dairy Products to New York

You will find the collection of Drafts will be greatly facilitated if they are drawn through

THE MARINE MIDLAND TRUST CO. of New York

Chambers Street Office:
130 CHAMBERS STREET

Located in the Center of New York's Wholesale Egg and Butter Trade

We Cordially Invite Your Patronage

Member Federal Deposit Insurance Corporation
Member Marine Midland Group of Banks

NEW JERSEY

(Continued from Page 8)

operate in making minor milk house changes required on a few farms.

4. Green Valley Farms arranged for financing the tanks where required, through a bank loan, payments being deducted from the producer's milk check.

Expenses of the above type are nonrecurring and Green Valley Farms feel that the actual cash outlay has been small compared to the following benefits which will repeat on a continuing basis:

1. The bulk system has resulted in improved milk quality as evidenced by greatly reduced bacteria counts.
2. Milk comes in the plant at temperatures below 40°F., eliminating the need for further refrigeration upon arrival.
3. Two men took four hours (a total of eight hours) to pick up the milk at night in cans. For the equivalent amount of bulk milk, one man will take six hours on the tanker, resulting in a labor time reduction of 25%.
4. The cost of operating some washing equipment and the labor cost of personnel operating that equipment is saved.
5. Valuable floor space has become available in the pasteurizing plant through release of such equipment.
6. The tanker is available for overnight storage of the milk, as required on a six-day pasteurizing schedule.

"Nip" Milloy, who used to pick up cans at night with an assistant, but is now the tanker driver, says that the hardest part of the job is driving the truck. He has a "Weigher's and Sampler's Certificate of Approval," issued by the Department of Agriculture, Office of Milk Industry, Trenton, N. J. This certificate is posted inside the tanker cab. Thinking about the company doctor, Mr. Milloy is sure he won't be worried any more about getting a wrenched back fixed up. He says it is also great to have a day-time job and to be able to enjoy the beautiful New Jersey scenery, which he has been missing for the last five years.

BANDLER TO HEAD DRIVE

Louis Bandler of the June Dairy Products Co., Inc. has been named chairman of the Dairy Industry Division of the Joint Defense Appeal, it was announced by Edmund Waterman, of E. Waterman and Co., JDA treasurer.

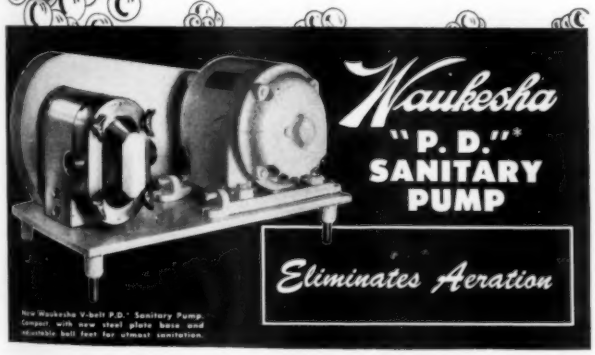
The JDA is currently conducting an independent campaign in the New York metropolitan area for $3,000,000 to support the programs of the American Jewish Committee and the Anti-Defamation League of B'nai B'rith in guarding democratic rights and combatting bigotry.

In accepting his position, Mr. Bandler predicted industry-wide support of the JDA drive. "The men in the dairy industry," he said, "know that the AJC and ADL are strengthening America in the face of one of the most dangerous threats in its history. At a time when national unity is essential to national survival, the peddlers of prejudice must be stopped."

Mr. Bandler, who is a member of the Executive Associates, has been active on behalf of a number of civic and philanthropic causes.

Bubbles have their place

But NOT in MILK



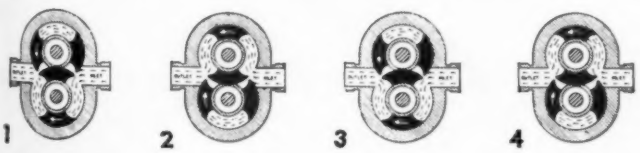
New Waukesha V-belt P.D.* Sanitary Pump. Compact, with new steel plate base and adjustable ball feet for utmost sanitation.

You'll get *no bubbles, no aeration, no agitation* in your product when you use the new Waukesha Sanitary Pump. Your product comes *out* exactly as it goes *in*. With Twin-Impeller type of pumping, no air can be taken in, nor can bubbles form in the product pumped. The slow, gentle, positive, smooth, pulsation-less flow protects the quality and consistency of your product.

More NEW Waukesha Features . . .

New One-Piece O-Ring Sanitary Seal • Corrosion-Resistant "Waukesha Metal" throughout • Polished "Lifetime" finish requires no painting, refinishing • Time-Saving Sanitation, no cracks or crevices inside or outside • Adjustable ball feet with higher floor clearance • Positive Displacement pumping, no aeration • Available in V-belt (Illustrated), Gearhead, and Reeves or U. S. Variable Speed Models — all with or without the Vented Cover.

CHECK THIS PRODUCT-FLOW DIAGRAM...



Sketches show the position of Twin Blade Impellers at each quarter revolution. Note four large chambers draw in and discharge four *full* loads at every revolution. No possibility of agitation or aeration.

*P. D. - *Positive Displacement for smoother flow.*

Write for the complete story on the NEW Waukesha P. D. Sanitary Pump.*

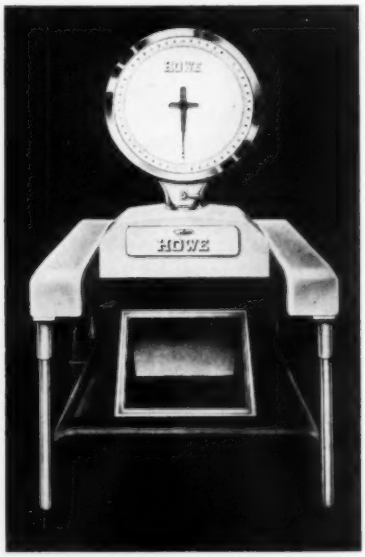
WAUKESHA FOUNDRY COMPANY
WAUKESHA, WISCONSIN

Waukesha 100% SANITARY PUMPS
Dependable Product of a Responsible Manufacturer

USING OUR SEPARATOR

Weigh-Can Scale

THE HOWE SCALE Company, Rutland, Vermont, announced the new HOWE DIAL WEIGH-CAN SCALE recently. The new unit is designed for use in dairies, creameries; milk receiving stations, butter, cheese, and ice cream plants.



It is a self-contained scale, adaptable to any type of milk receiving room layout, and can be moved and reinstalled as desired or whenever changes become necessary in the plant buildings.

It incorporates all of the features of the Howe Tape-Drive, ball-bearing mechanism. There is no rack, no pinion. Tapes are fully self-aligning, and held in position by Howe patented button connection. There is 300% increase in tape strength. The mechanism is self-compensating for temperature changes. There is no zero change or inaccuracies with wide changes in temperature. Back weighs within front weighing tolerance. It is simple to calibrate with sensitive and accurate indication. The large 20" dial can be set at any angle for reading, and it is completely sealed for protection against moisture, dust and vermin. A locking device locks the dial mechanism for protection against abuse.

The knife edges and bearings in the lever system of the Howe Dial Weigh-Can Scale are stainless steel. Other parts are also protected against the conditions encountered in milk receiving plants. The lever is enclosed and there are oil seals on the suspension rods. Provision is made for balancing off the weight of the can.

The finish is a baked Hammerloid light blue-gray for maximum cleanliness and sanitation. Ball-bottom pipe legs are designed in accordance with milk industry requirements.

The Howe Dial Weigh-Can Scale can be equipped with the Howe Teleprint Remote Weigh-Recorder with a 16-day ticket for efficient weight control.

●

Text Book For Routemen

Hundreds of sound sales ideas and strategy are brought together in " Selling Sense. . ." -- in a manner that will be quickly and easily understood -- to assist the beginner as well as the veteran route man to produce greater volume and increased profits from any territory -- wholesale or house to house.

Scores of examples of successful sales techniques have been assembled from industries relying upon route selling for distribution, including bakeries, milk dealers, ice cream manufacturers, wagon jobbers of food products, laundries, dry cleaners, linen suppliers, etc.

The author, Fred DeArmond, is a well known writer and lecturer on problems of route selling, who has had broad experience as a route salesman and in sales management.

In his foreword to "Selling Sense...", the author declares that "Salesmanship is much broader than the mere techniques of approach, presentation, and asking for the order. More, perhaps, than any other vocation, it calls for a broad understanding of people and what makes them do what they do in the way they do it. Route selling, which is the subject of this book, is still broader because it embraces service and, in the case of the wholesale man, merchandising. The interests of both retail and wholesale route salesmen are treated."

On that premise, the author reemphasizes proven principles of sales psychology by practical applications to the routeman's particular problems in the every-day language of route selling.

Better DRY MILK

AT LOWER COST

●●●

DRY MILK MACHINES
Built in Five Sizes

The Patented, glass-smooth, "20-year cylinders" give years and years of maximum production of a superior dry milk at the lowest possible cost.

Many other exclusive features insure long life with low steam and power costs. Complete details upon request

OVERTON MACHINE COMPANY

Dowagiac Michigan

GRANT
PAPER BOX CO.,
3000 Liberty Ave., Pittsburgh, Pa.

Food-Plant Sanitation

A NEW 24- LESSON course in "Food Plant Sanitation" for food technologists, plant inspectors, processing supervisors and warehouse supervisors has been announced by International Correspondence Schools, Scranton, Pa. The first of its kind in the home study field, this new series of lessons is set up to be taught either to those who enroll individually, or to groups of employees enrolled by their companies for special training in the technology of sanitary practice.

The new course should not be confused with food processing. A quick look at the 24 lessons shows that Food-Plant Sanitation might well be called "Plant Housekeeping." The instruction covers cleanliness of equipment and utensils, control and extermination of rodents and insects, and the detection and removal of contaminating materials.

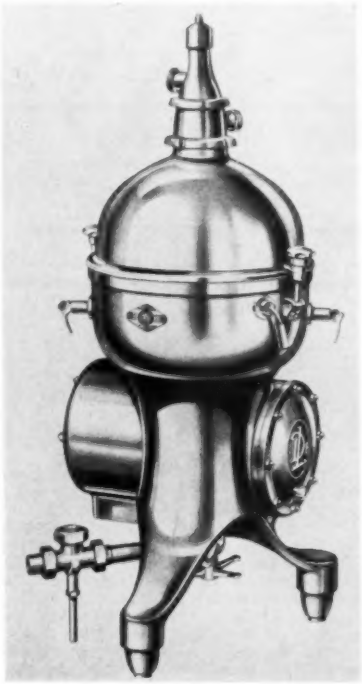
According to John G. Remsen, director of the School of Chemistry at I. C. S., the subjects covered by the 24 lessons are, in order,

Arithmetic
Elementary Chemistry
Basic Organic Chemistry
Sanitary Chemistry
Sanitary Bacteriology
Purification of Water
Operation of Sewage Treatment Plants
Sanitation in Quality Control, Building
Construction and Equipment
Water Supply, Water Disposal and Utilization
Establishing and Maintaining Sanitary Practices
Legal Aspects of Pest Control; Insect Control
Rodent Control; Fungus Control
Detergents; Effective Cleaning Practice
Sanitary Packaging Practice
Sanitary Aspects of Packaging Materials

●

New Standardizing Clarifier

THE DE LAVAL Separator Company announces the addition of the No. 295 "Air-Tight" Standardizing Clarifier to its line of "Air-Tight" Clarifiers for dairy plants.



It is felt that this completely new machine will fill a real need in the dairy industry as it will not only standardize milk accurately, but at the same time insure absolute protection of the product by complete clarification.

The De Laval No. 295 Standardizing Clarifier has the following advantages:

1. Removes a portion of the cream from the whole milk without separating all of the cream from the milk.

The No. 295 Standardizing Clarifier will remove up to two pounds of butterfat from each one hundred pounds of milk. For example, if the milk to be standardized contains 5 per cent of butterfat, the De Laval Standardizing Clarifier can be set to produce whole milk containing 3 per cent butterfat.

2. Produces a completely clarified standardized milk.
3. Model No. 295 operates with a maximum capacity of 20,000 lbs. of milk per hour. The De Laval Standardizing Clarifier will soon be available in two smaller sizes.
4. Standardizes and clarifies at a temperature as low as 40°F. or as high as 135°F. Results are equally good at any temperature in this range.
5. External regulation of the standardizing valve makes it possible to change the butterfat content of the butterfat content of the clarified whole milk without stopping the machine.
6. Model No. 295 Standardizing Clarifier bowl and standardizing valve attachment can be used in De Laval Models Nos. 292, 288, 192 and 188 "Air-Tight" machines.
7. Model No. 295 Standardizing Clarifier is furnished with a stainless steel bowl, assuring extra long life.

For further information write to the De Laval Separator Co., 165 Broadway, New York 6, N. Y.

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Keep right on using FLAV-O-LAC FLAKES . . . regularly!

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• RUGGED
• SAFE

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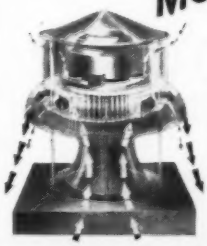

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Motor OUT of the airstream solves dairy industry problem of exhausting moisture entrained air without motor damage. Extremely rugged construction, economical.

Independently Certified Ratings. Capacities 150-12,000 CFM. Static Pressures to 1¼".

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Omaha, Nebr. Owatonna, Minn

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EQUIPMENT FOR SALE

FOR SALE — 10 1947 Dodge Model WD 21, 1-Ton Milk Trucks with special Boyertown Insulated Milk Bodies. Bodies are ninety-three inches long, fifty-five inches wide, fifty-four inches high, two inches fiber glass insulation, single rear door, refrigerator hardware and cost approximately Nine Hundred Dollars new. Tire size, six-fifty sixteen front, seven hundred sixteen single rear. These units cost Nineteen Hundred new and are in excellent condition. They are especially priced for immediate sale at $595.00 each. If interested, phone Alden MacLellan, Inc., Allentown, Pennslyvania, 4-6256 Collect. Subject to prior sale. 7-M-51

FOR SALE—1947 International retail delivery truck, low mileage, $750.00. Also, several older units, high mileage but good condition, $250.00 each. All trucks running daily, but being replaced under normal fleet rotation program. New London and Mohegan Dairies, New London, Conn. 7-M-51

EQUIPMENT FOR SALE

FOR SALE — Boilers, high and low pressure, new or used. Also new or used smoke stacks, breechings, boiler tubes, pumps, motors, pipe, valves and fittings. Write Otto Biefeld Co., Watertown, Wisconsin. 7-M-51

FOR SALE—Rebuilt late style 125 gal. viscolizer. Excellent condition. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 7-M-51

FOR SALE—Four Ideal Vending machines; two 150 gal. C-B square type s/s pasteurizers with automatic controls; Copeland two ton water cooled compressor with two blowers, freon; 50 gallon univat; Model AW C-B weigh can, scales and pump; Burge two ton ammonia compressor; six foot Surface cooler; motor driven No. 30 DeLaval separator; Specialty Brass jug filler; five foot aluminum ladder; Specialty Brass six valve filler with alumaseal hooder. Write Carlson Dairy, 9 West State, Geneva, Illinois. Write for appointment. 7-M-51

FOR SALE—One single head Aluma Seal Capping Machine. Used 4 months. Priced low. One Pressure Type Girton Bottle Washer with chlorine sterilizer. Excellent conditions. Bargain price. Cooler's Dairy, Walterboro, South Carolina. 7-M-51

EQUIPMENT FOR SALE

FOR SALE—4F Heil washer for immediate delivery. 22 bottles per minute. Pockets need some repair. $250.00. Write People's Dairy, Inc., 2237 Gay Street, Fort Wayne 5, Indiana. 7-M-51

FOR SALE—Ready to drive away —used delivery equipment. We have UM and ULM Divcos; Dodge 1 Tons with Dekalb Bodies; Wholesale milk trucks and bodies. If you need equipment for a new route or for a spare, contact us now. We are the largest operator of milk delivery equipment West of the Mississippi. Call or write BAKER TRUCK RENTAL, INC., 302 N. Osage, Wichita 2, Kansas. 7-M-51

REBUILT — Pasteurizers, Milk Coolers, Bottle Fillers, Ice Machines, Plate Coolers and heaters. Send us your requirements. Ohio Creamery Supply Company, 701 Woodland Avenue, Cleveland 15, Ohio. 7-M-tf

FOR SALE — 1 Cherry-Burrell 6-16 Bottle Filler. Good condition. 5 years old. 1 Cherry-Burrell Single-roll Butter Churn No. 50. MILLER-REED DAIRY, INC., 211 E. Garfield Street, Shippensburg, Pennsylvania. Phone 246. 7-M-51

FOR SALE—Rebuilt model CP3644 Chester Pyramid Cooler, late model. All stainless trim. Excellent condition. Attractive price. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland, Ohio. 7-M-51

FOR SALE—All stainless steel Mojonnier Cabinet Cooler 7-48 tube sections. Fine condition. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 7-M-51

FOR SALE — Stainless steel internal tube specialty brass Noburn Heater. 2 sections, 8 tubes, each 10 feet long. Mounted on one stand. Excellent condition. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 7-M-51

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Evaporated Milk—Powdered Skim Milk — Powdered Buttermilk — Condensed Skim and Whole Milk — Powdered Whole Milk.

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MILL CREEK "R" A Long-Lasting Residual

SURER ★ FASTER ★ MORE DEADLY TO INSECTS

SAFE for dairy plants and milk handling equipment when used as directed. Mill Creek dual-action guarantees quick knockdown with lethal wing paralysis followed by rapid and deadly leg paralysis. Write for details.

KLENZADE

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EQUIPMENT FOR SALE

FOR SALE — One Model E, 125 gallon Manton-Gaulin Homogenizer, complete with new 60 gallon Pfaudler Feed Tank, together with 1½ inch stainless steel tubing, valves, etc. Real bargain. Write Empire Products Corporation, Box 179, El Paso, Texas. 7-M-51

FOR SALE — Homogenizer. Manco Flowmaster Model 500. Working condition. Used less than a year. Cost $2,000.00. Will sacrifice for quick sale. Reply Box 139, care this publication. 7-M-51

FOR SALE — One DELAVAL PLASTIC BOWL No. 192, stainless steel bowl and discs. Excellent condition, never used. One SPEIRS PLASTIC CREAM COOLER stainless steel Model 110A. Excellent condition, never used. One CHESTER PREHEATER stainless steel 24 tube model Stu-Vac-SV20. Excellent condition. Two CHESTER HOT WELLS single wall, stainless steel 600 gallon. Excellent condition. One MARCO FLOW-MASTER HOMOGENIZER model A-500. Excellent condition. One ELGIN TWIN CYLINDER FILLER up to 32 ounces, 60 PM. Excellent condition. One DAMROW CHEESE COOKER single screw, stainless steel, 500-lb. capacity. Excellent condition. North American Creameries, Inc., 320 Metropolitan Life Building, Minneapolis 1, Minnesota. Telephone: BRidgeport 6877. 7-M-51

FOR SALE — No. 142 DeLaval Separator and Pump, in excellent condition. Price complete $850.00. Jersey Farm Dairy, 1136 S. Ft. Thomas Ave., Ft. Thomas, Ky. Phone HI-0726. 7-M-51

FOR SALE — G 160 Cherry Nuline Filler Left Hand. Stainless Bowl. Capacity 72-84. Power conveyor chain and track through machine. Valves and Cappers for 56mm. Bottles. Priced reasonable. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 7-M-51

FOR SALE — Rebuilt C.P. No. 26 Filler Right Hand with conveyor track. Stainless bowl. 10 valve. Capacity 45-96. For 51mm. or 56mm. bottles. Good condition. Ohio Creamery Supply Co., 701 Woodland Ave., Cleveland 15, Ohio. 7-M-51

EQUIPMENT FOR SALE

FOR SALE — 800 gallon Viscolizer, with or without 30 H.P. 25 cycle motor—also new and used wooden milk cases for 48 MM round glass bottles—Rice and Adams Stainless steel weigh tank, 916 pounds capacity. 7-M-51

FOR SALE—1 used 150 h.p. horizontal Ames boiler, stack and stoker inspected in December, 1950 and 125 s.p. allowed, $1600 where it is and as is. One used 30 h.p. Ames horizontal boiler. One used 3x3 York ammonia compressor, self-contained with brine tank. One used 8 cans per minute Carl Braun can washer. One used dial platform milk scale, 1,000 pounds capacity. About 40 feet of milk can conveyer with three bends. One 500 gallon tin copper receiving vat and one ceiling steam heater. Write Sauquoit Valley Dairy Company, Inc. 491 French Road, Utica 4, New York. 7-M-51

WANTED — Misprint or out of date plug or pull type 48 and 56 milk caps. 5 gallon chocolate pails. We buy, sell and trade any kind of dairy equipment. Wire us. Gordon Equipment Company, 6530 W. Jefferson, Detroit 17, Michigan. 7-M-51

FOR SALE — Cherry-Burrell and Creamery Package Short Time Pasteurizing Systems, 11,000 lbs. capacity; 150 and 200 gallon Round Stainless Steel Pasteurizers, also 100 to 300 gallon Cherry-Burrell Spray Vat Pasteurizers; Creamery Package Full-Flo Plate Cooler, 35,000 lbs. raw milk per hour; two Mojonnier Stainless Steel Cabinet Coolers, 8 wings each 72 tubes high; Cherry-Burrell Junior Cabinet Cooler, 9 wings each 36 tubes high; No. 142 and No. 172 DeLaval "Air-Tight" Separators; 6-18, G-70, G-100, G-160, G-240, GV-20 Cherry-Burrell Fillers; 4, 6 and 8 Wide Bottle Washers; 75 to 1500 gallon Homogenizers or Viscolizers; 1000, 2000, 4000 and 6000 gallon Pfaudler Glass Lined Storage Tanks (For By-Products); Rotary Milk Can Washers, 1½ to 6 c.p.m. Vacuum Pans, Pumps, etc. Write or wire your requirements. Lester Kehoe Machinery Corporation, 1 East 42nd Street, New York 17, New York. Telephone MUrray Hill 2-4616. 7-M-51

SPECIAL OFFERINGS—3000 gallon Pfaudler Stainless Steel Tank with Direct Expansion coil; 1500 gallon Pfaudler Stainless Steel Tank; No. 188 DeLaval "Air-Tight" Clarifiers; Sharples "Presur-Seald" All Stainless Clarifier, 12,000 lbs.; Speirs Plastic Cream Cooler; 300 gallon Manton Gaulin Model CGC and CGD Homogenizers. Write or wire your requirements. Lester Kehoe Machinery Corporation, 1 East 42nd Street, New York 17, New York. Telephone MUrray Hill 2-4616. 7-M-51

EQUIPMENT FOR SALE

FOR SALE — Dutton 37 h.p. Broiler with Water Softener, Blower Grates, Automatic Controls. Three years old. Excellent condition. Write Inlet Valley Farms, Inc., Meadow Street Extension, Ithaca, New York. 7-M-51

PRODUCT WANTED

WANTED—Large or small supply of skim for cheese to be manufactured on premises. Unequalled opportunity. Reply Box 136, care this publication. 7-M-51

MISCELLANEOUS

Dairy Orange-ade made with 6 parts water 1 part Bradway Orange-ade base. $8.10 per case, 6 number 10 tins. Write for sample. Bradway Chocolate Company, New Castle, Indiana. 7-M-51

Dairy Grape-ade is profitable. Your total cost 9c per quart. Write for sample. Bradway Chocolate Company, New Castle, Indiana. 7-M-51

Chocolate Milk made from Bradway genuine chocolate powder or syrup is better. Write for sample. Bradway Chocolate Company, New Castle, Ind. 7-M-51

FOR SALE—Truck lettering and trade mark decals, made for your truck and store advertising. Easy to apply; uniform, distinctive, economical for small or large needs. Write for catalog. Mathews Company, 827 South Harvey, Oak Park, Illinois. 7-M-51

ROUTE SHEETS printed to fit your ring binders. Delivery record cards. Statements or milk bills. Dairy reports. Write Mose Pearlstone, P. O. Box 60, St. Louis 3, Mo. 7-M-51

THERMOMETER REPAIR

THERMOMETERS—We repair Mercurial Indicating Thermometers, dial thermometers and recording thermometers of all makes. Instruments are reconditioned like new. Satisfaction guaranteed. For economical savings, ship your thermometers to Nurnberg Thermometer Company, 124 Livingston Street, Brooklyn, New York. 7-M-tf

BUSINESS OPPORTUNITIES

FOR SALE—Grade A dairy, distributor route with truck franchise, walk-in cooler, growing business, wonderful opportunity, reasonable. Located in Central Wisconsin. Write Box 135, care this publication. 7-M-51

FOR SALE — Well established North-New York Dairy. Last year's sales, $29,096.58. Plant, garage and dwelling in excellent location. Terms cash. $18,000. Reply Box 140, care this publication. 7-M-51

Yes! **AND IT REMINDS HIM TO SELL**

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"Servants to the Dairy Industry"

BOX "A" **CINCINNATI 3, OHIO**

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BUSINESS OPPORTUNITIES

DAIRY, WHOLESALE-RETAIL — Busy Indiana city; sales $86,000 year; established seventeen years; glazed building 30x40; modern equipped; five trucks; sell with property. APPLE COMPANY, BROKERS, CLEVELAND, OHIO. 7-M-51

Wishing to retire I will sell my entire ice cream manufacturing business, complete with real estate, equipment, stock, etc. First season profit should take care of down payment; will accept balance as it is made. Will consider leasing to responsible person. If you want to make money in the ice cream business, this is IT. For full particulars, write E. E. Schmick, Elmira, N. Y. 7-M-51

FOR SALE — Profitable retail and wholesale milk business in Michigan. Dairy Bar. Good investment terms. Write Box No. 133, care of American Milk Review, New York 7, N. Y. 7-M-51

FOR SALE — Medium size milk and ice cream plant, with all brick plant built in 1938. Only dairy manufacturers in town. Located in southern Indiana. Volume increasing every year. Priced reasonable. Reply Box No. 134, care this publication. 7-M-51

POSITION WANTED

French dairy plant manager, experienced all phases including camembert cheese, 35 years old, seeks permanent position with future. Speaks, writes English fluently. Details and/or interview on demand. Jacques Fidas, 2761 Brandywine St., N.W., Washington, D. C. 7-M-51

POSITION WANTED — By married man, age 46. Been working in the dairy and ice cream business for the past 26 years. Well experienced in standardizing mix, milk, cream and making buttermilk. Also well experienced in Vogt or C.P. freezers, Short time pasteurizing, pure pak, ammonia and freon. Know how to keep a dairy plant report of all in coming and outgoing products. Also manage help and keep production in line. Now employed as plant manager. Have reason for seeking employment somewhere else. 7-M-51

HELP WANTED

WANTED—Man familiar with diversified milk manufacturing plant, making powder, cream, ice cream mix, sour cream and buttermilk. Must be experienced in handling help. Good job for the right man. Write Box No. 132, American Milk Review. 7-M-51

PLANT FOR SALE

FOR SALE—Small modern dairy located in central part of Vermont. Route consists of 650-700 quarts with excellent potential to 2000 quarts. Industrial community. Will sell whole or part to right person. Write Box 138, care this publication. 7-M-51

MISCELLANEOUS

Pure tree ripened lime juice, orange juice or tangerine juice for better sherbets. Sample order, 12 number 10 cans, any combination, only $15.00. Choate and Atkins, Eustis, Florida. 7-M-t.f.

●

NEW QUALITY CHEKD MEMBER

New Haven Firm Joins National Organization of Dairy Products Companies

Chicago, Ill.—The Golden Crest Farm Ice Cream Company, Inc., of 205 Fairmont Avenue, New Haven, Conn., has been accepted as a member of the Quality Chekd Dairy Products Association, it was announced by association officials in Chicago. The association is a national organization of independent ice cream manufacturers and dairy companies.

The story of Golden Crest Farm is a family story of the industrious Antollinos' who started this progressive plant just four years ago. Today, headed by Ernest A. Antollino, president, and Thomas Antollino, treasurer, the plant serves customers within a 50-mile radius of New Haven with a modern mechanically refrigerated fleet of trucks.

AWARD FOR MASTITIS CONTROL

Ohio, Wisconsin Firms Receive Recognition in Quality Milk Improvement Campaign

Columbus Milk Producers' Cooperative of Astico, Wisconsin, have been presented the Sterling Research Corporation, of Buffalo, New York, Award of Merit Trophy in The Producers

Division of the Dairy Industry in the QUALITY MILK IMPROVEMENT CAMPAIGN. The Page Milk Company of Coffeyville, Kansas received a similar Award for The Milk Dealer Division.

Presentation of the awards are mad. on the basis of interpretation and evaluation of Field reports received from Producers Associations and Processors whose Producers use The Sterling developed Test for Mastitis.

Focal Point of the Campaign was an Attack on Mastitis, on the theory

Low Cost Sanitary Way to **CLEAN ALL CANS**

Thoroughly cleans inside of straight or irregular shaped cans. Multiple fingered rubber scrubber gets to every corner and crease. Electrically operated. Attach water line, plug in and it's ready to go.

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GORDON JOHNSON COMPANY

2519 U Madison St., Kansas City, Mo.

NEW *Cationic* CLEANER *for* DAIRY *and* CHEESE PLANT EQUIPMENT

THE Key TO PERFECT SANITATION

CLEANS SANITIZES DEODORIZES

KLEEN-EZEY

CLEANER-SANITIZERS
LIQUID—POWDER
FOR DAIRY FARMS

LAZARUS LABORATORIES, INC.
137 W. EAGLE ST. • BUFFALO 2, N.Y.
contact your jobber

that – NO QUALITY MILK PRODUCT can come from the udder of a Diseased cow. Mastitis is a Disease and all the Pasteurization in the World--Doesn't Cure the Cow.

Fieldmen find them convenient and quick to locate Mastitis infected cows and which cuts Milk Rejections at the intake to a minimum.

●

TWO SEPTEMBER CONVENTIONS

Iowa Association and Cornell University to Hold Conclaves in Latter Part of the Summer

September 12th and 13th have been established as the dates for the annual meeting of the Iowa Milk Dealers Association and the Iowa Ice Cream Association. According to John H. Brockaway, secretary of the associations, a stimulating program is taking shape and a record attendance is anticipated. The convention will begin on the evening of the 11th and continue all day during the 12th and 13th.

Cornell University's picturesque campus will be the scene of the Sixth Annual Dairy Industry Conference on September 6th and 7th. According to the University's Department of Dairy Industry the program will be of particular interest to those concerned with sanitation, processing, distribution, and the utilization of the milk supply in the state of New York. There will be a discussion of such subjects as antibiotics and quarternaries, cultured milk including yogurt, pasteurization, cleaning equipment, fresh concentrated milk, vending machines and other pertinent subjects.

Dairymen attending the convention will be housed in hotels while the meetings and banquet will be held in Statler Hall.

INDUSTRY PROBLEMS

(Continued from Page 32)

contained. The amount of neutralizer to be added is calculated and diluted with 10 times its volume of water. If the Cream contains a great deal of acid, it way be well to use both types of neutralizer, using lime to reduce the acidity about half way to the goal, followed in about 15 minutes with soda sufficient to produce a desirable churning acidity.

Adding Neutralizer

In all cases the neutralizer is added to the well mixed cream while it is being agitated. It is usually advisable to warm the cream somewhat as this makes mixing easier, but excessive temperatures (above 90°F.) may increase the possibility of getting mealy butter and large fat losses.

A sprayer inserted into the agitating cream where turbulence is highest is usually the best procedure for adding neutralizer and the material must be added slowly.

The cream is then pasteurized and the acidity is rechecked.

Butter made at the present time in the Scandinavian countries is made from pasteurized cream which is then ripened. It is not neutralized before churning. Because such butter has relatively poor keeping qualities, it has become common to neutralize the butter at salting time.

Dry neutralizer is mixed with the dry salt added to the churn and mixed with the butter during working. They do not try to neutralize completely but only enough to bring the pH of the butter to about 6.0. This improves the keeping quality.

Both the Scandinavians and the Australians have ceased to wash butter. They believe that a better quality butter is produced without washing, and, since this saves one step in churning, their labor costs and time are reduced. Both have a reputation for producing a fine product.

In any case, we do not feel that butter should be washed more than once as washing reduces the flavor of the butter. If the cream is of very poor quality, some of the objectionable flavors may be partially removed by further washing but it is generally not advisable.

Kurly Kate
METAL SPONGES
Designed especially for cleaning all types of dairy equipment and utensils. Will not rust or splinter, cut the hands or injure metal or plated surfaces. Kurly Kate Metal Sponges are fast working, easy to use, and easy to keep clean. Made in STAINLESS STEEL, NICKEL SILVER and BRONZE.
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Satisfaction fully guaranteed
KURLY KATE CORPORATION
2215 S. MICHIGAN AVE. CHICAGO 16, ILL.
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stainless metal sponge
FOR EASIER INDUSTRIAL CLEANING
SOFT ON HANDS
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